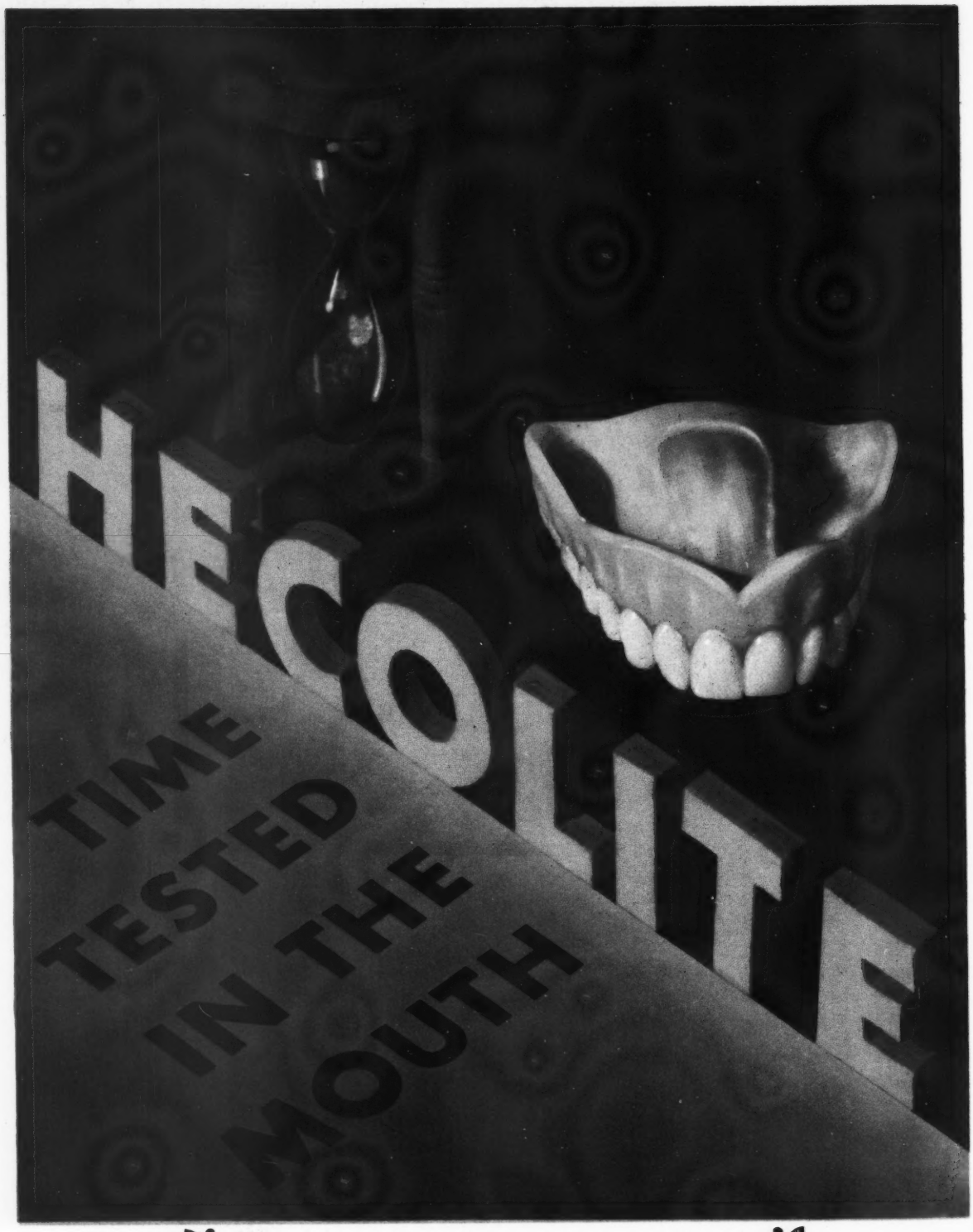
The DENTAL DIGEST

November



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The DENTAL DIGEST

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PERIODONTAL DISEASE: DIAGNOSIS AND TREATMENT

SIDNEY SORRIN, D.D.S.
New York

THE last few years have been productive of much research work in periodontology, particularly from the histologic and pathologic points of view. Our present day knowledge has been greatly increased through the efforts of those who have related their experiences so that others might learn. Many interesting etiologic factors have been brought to the surface, particularly those pertaining to disturbances in metabolism and diet. It has been our contention that these particular cases should be referred to the proper medical authorities for their investigation, study, and therapy. From the purely dental standpoint much can be accomplished by a thorough investigation as to factors that might cause a lowered resistance locally and thus in themselves cause the development of periodontal disease. A profound study of occlusion, the effects of food impactions, instrumentation, scientific toothbrushing, and diet would in a measure aid in solving many of the periodontal problems. The recognition of the earliest signs and symptoms of periodontal disease is indispensable to the accomplishment of a satisfactory result. It will also tend to safeguard the general health of the patient and prevent the possible loss of the teeth.

Periodontal Diagnosis

In order to treat any disease it is necessary to determine its nature. The process of determining the nature of a disease is called diagnosis. Diagnosis of periodontal disease cannot be properly determined unless its presence is pointed out and its etiology stressed. Before diagnosis can be rendered, several factors must be considered. They are (1) a complete study of the tissues involved; (2) what factors tend to produce disease, and (3) how lesions can be recognized. It is important to tabulate all observations on a suitable record chart. Such a chart is used in the Periodontia Clinic of New York University and in my office, and it has proved of inestimable value. On this chart are recorded all

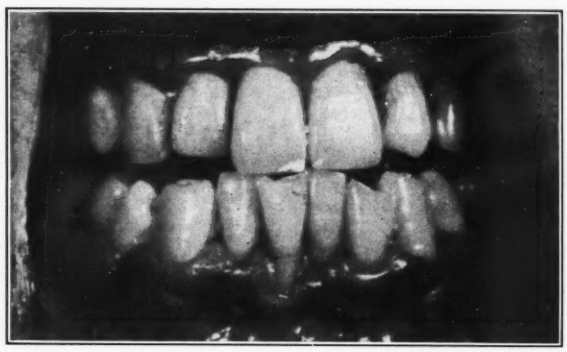

Fig. 1—Bluish coloration of tissue. Traumatic ulatrophy on the lower right central incisor.

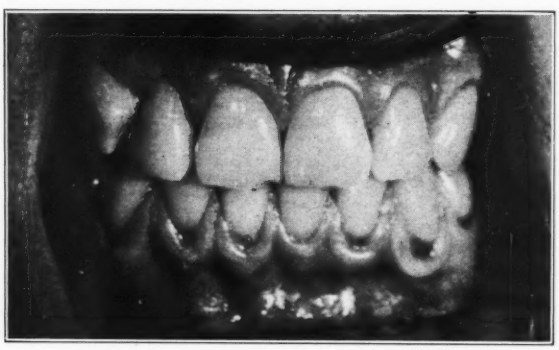

Fig. 2—Stillman's cleft on upper right lateral incisor. Note recession of lower teeth and McCall's festoon on lower teeth.

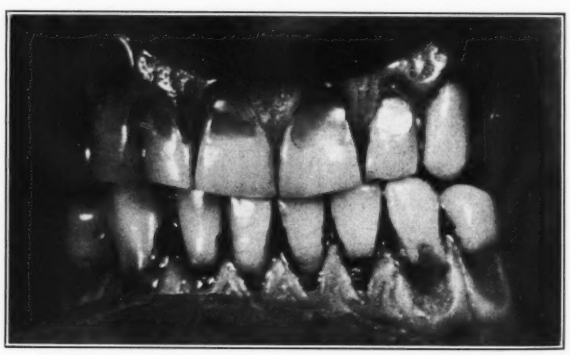

Fig. 3—Toothbrush trauma. Effect of cross-brushing.

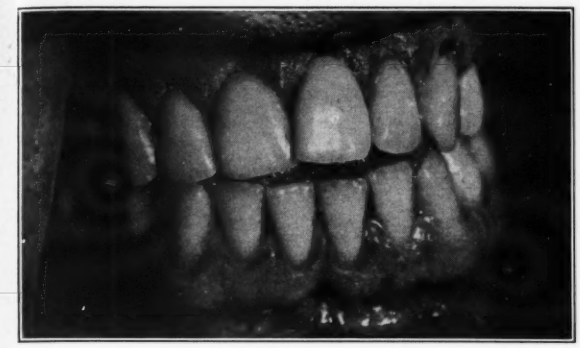

Fig. 4—Lowered tone of tissue due to nonocclusion. Note recession of tissue on upper and lower incisor teeth, and traumatic ulatrophy on upper left cuspid.

Fig. 5—Loss of tissue on the lower teeth due to Vincent's infection. The white area is a photographic high spot.

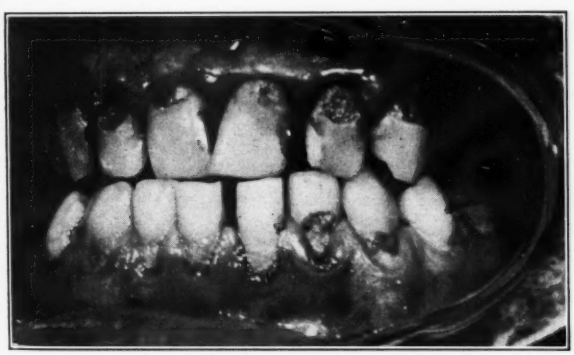

Fig. 6—Hypoplasia of enamel. Marginal gingivitis of lower teeth.

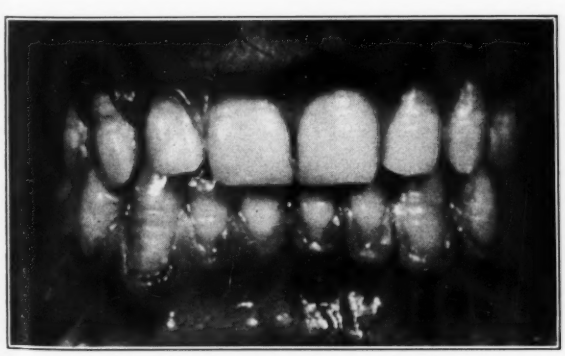

Fig. 7—Festoons on labial surface of lower teeth.

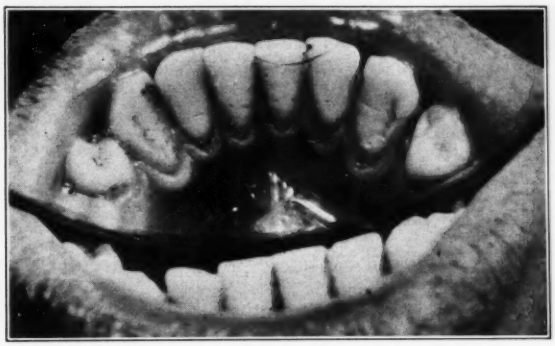

Fig. 8—Same case as in Fig. 7 showing recession and festoons on the lingual surfaces of the lower teeth.

Fig. 9—Combination of erosion, recession, traumatic occlusion and toothbrush trauma.

Fig. 10—Hypoplasia of the upper and lower anterior teeth; venous congestion with marked mobility and recession of all the teeth. Lack of proper diet was instrumental in causing the development of this condition.

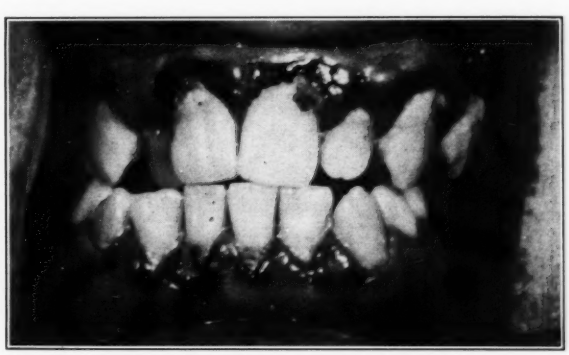

Fig. 11—Congestion of marginal gingivae.

Fig. 12—Acute Vincent's infection.

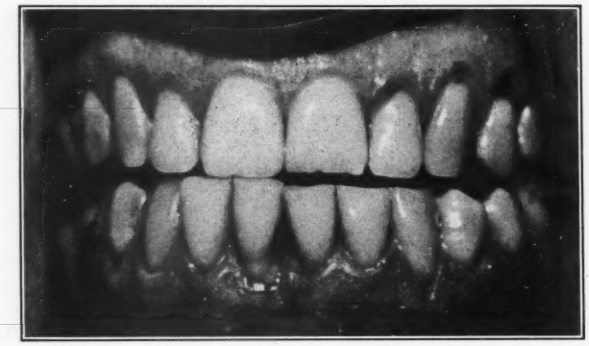

Fig. 13—Recession on lower right central incisor induced by severe traumatic occlusion. Note recession on upper and lower left cuspids.

Fig. 14—Destruction of hard and soft tissue due to toothbrush abrasion.

Fig. 15—Loss of the interdental papillae.

Fig. 16—Venous congestion of upper and lower tissue. Recession on lower right central incisor.

Fig. 17—Gingival festoons on lower teeth.

Fig. 18—Filth pyorrhea or periodontitis simplex.

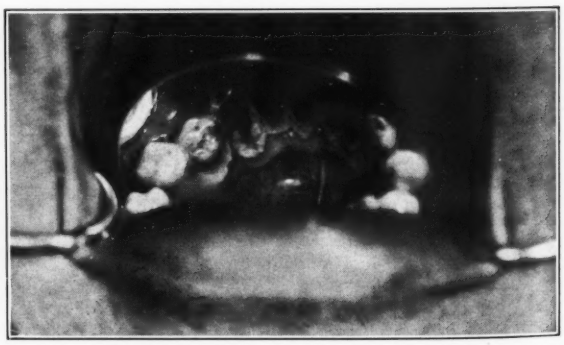

Fig. 19—Lingual view of same case as in Fig. 18.

Fig. 20—Myologenous leukemia. Note proliferative gingivitis.

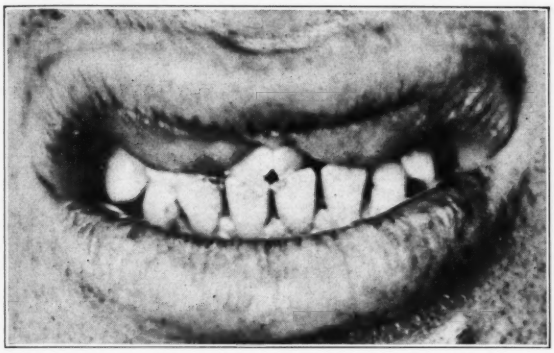

Fig. 21—Lip condition caused by peculiar position of the teeth.

Fig. 22—Another view in same case shown in Fig. 21.

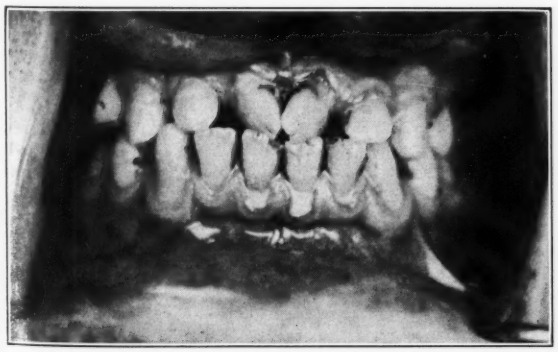

Fig. 23—Same case as in figures 21 and 23. Note recession of tissue around mandibular incisors.

Fig. 24—Recession and gingivitis.

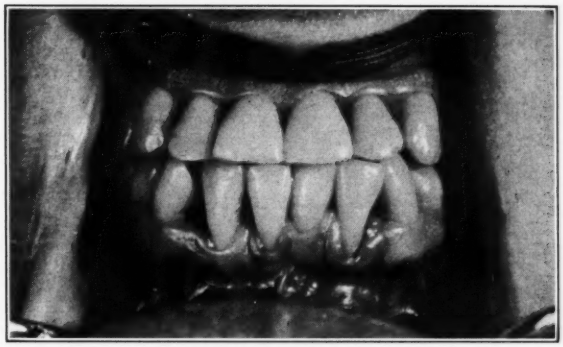

Fig. 25—Gingival festoons, particularly on labial surfaces of mandibular teeth.

Fig. 26—Severe periodontal disease necessitating the extraction of all the upper teeth and the majority of the lower teeth.

Fig. 27—Roentgenograms of case shown in Fig. 26.

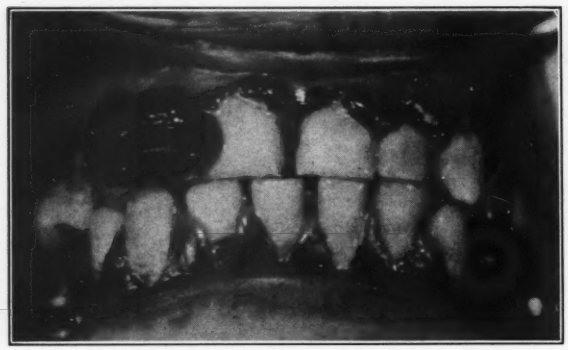

Fig. 28—Gingivitis of pregnancy. Note deep red proliferative tissue.

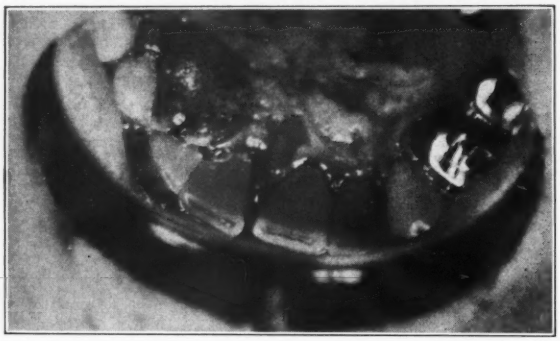

Fig. 29—Lingual view in same case shown in Fig. 28.

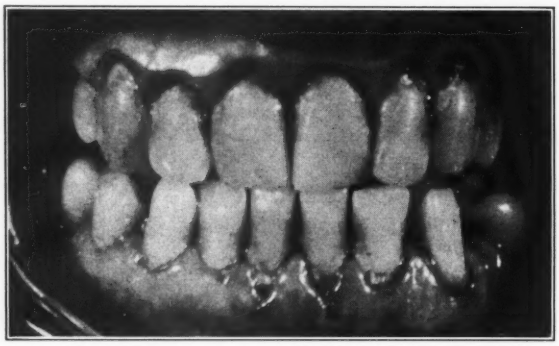

Fig. 30—Stillman's clefts on mandibular central incisors.

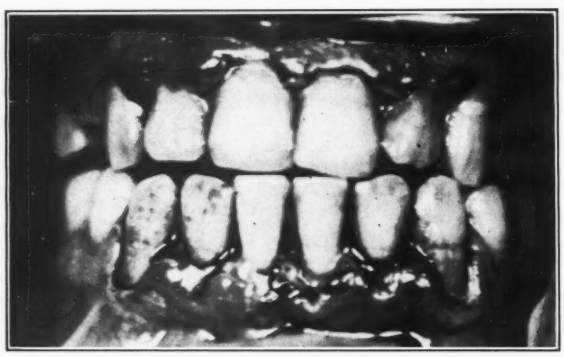

Fig. 31—Vincent's infection. Note white necrotic membrane.

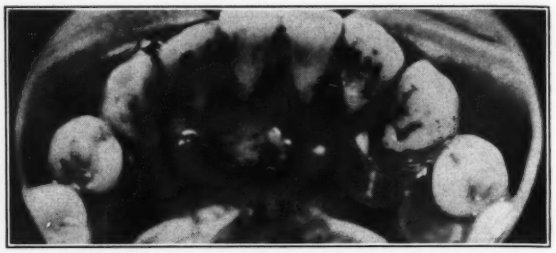

Fig. 32—View of lingual of lower anterior teeth.

Fig. 33—Same case as Fig. 32. View of lingual of upper anterior teeth.

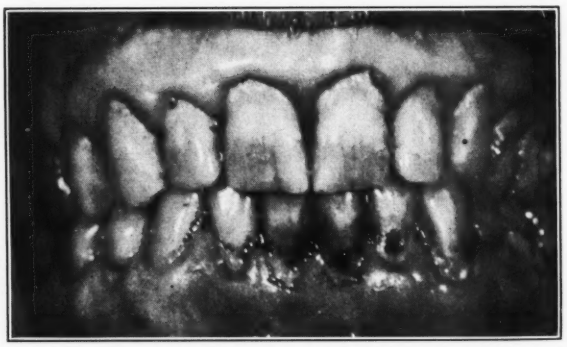

Fig. 34—Filth pyorrhea or periodontitis simplex.

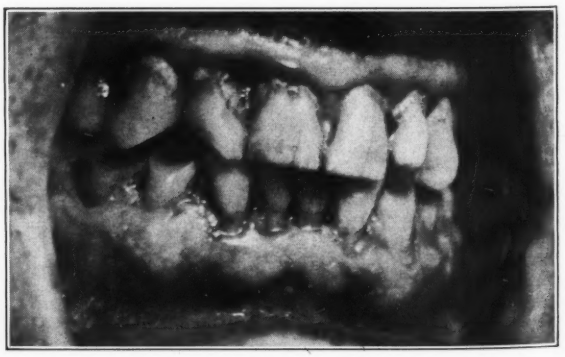

Fig. 35—Loss of enamel as a result of pipe-smoking in an unclean mouth.

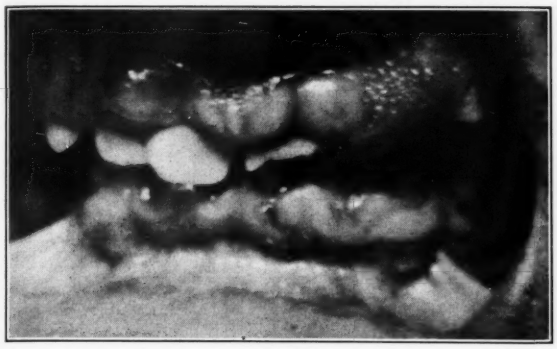

Fig. 36—Proliferative tissue. Hard, pink, firm, caused by endocrine disturbance.

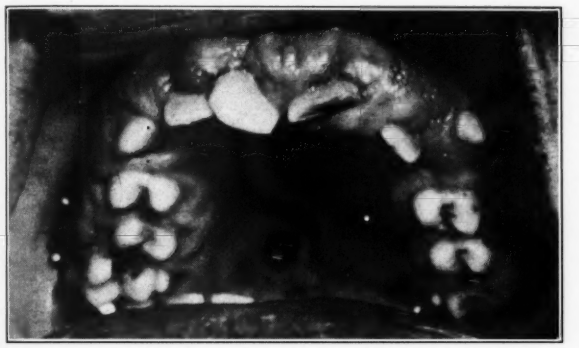

Fig. 37—Lingual view in same case as Fig. 36. Note peculiar arrangement of teeth.

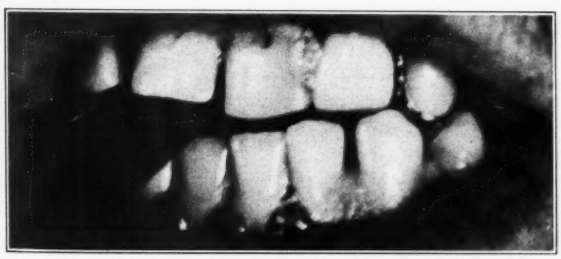

Fig. 38—Pipe smoker.

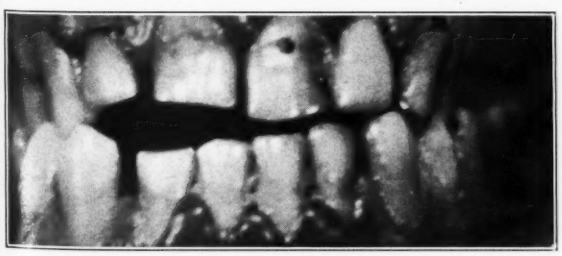

Fig. 39—Same case shown in Fig. 38. Note traumatic effect.

Fig. 40—Marginal gingivitis.

systemic and local conditions, thus serving as a guide as to whether local conditions, such as traumatic occlusion, food impactions, marginal irritations, defective contact points, faulty bridgework, margins of restorations, crowns or bands, toothbrush trauma, calculus, or local acidity, have been the etiologic factors, or whether diet, systemic diseases, disturbed metabolism, or glandular disturbances have been instrumental in causing disease. The chart also indicates whether the conditions observed are those of recession, erosion, gingivitis, alveoloclasia, pericementoclasia, or periodontal abscess. In short, the proper diagnostic chart helps to discover all these factors because of the thorough attention paid to details.

How can the practitioner record data on a chart properly if he is unable to recognize these lesions? Doctor Harold Keith Box of Toronto has outlined some diagnostic signs among which are (1) traumatic crescents; (2) congestion of marginal gingivae; (3) recession of marginal gingival line; (4) the presence of McCall's festoons; (5) Stillman's clefts; (6) shortening of the crest of the septal gingiva; (7) absence of stippling; (8) increased depth of gingival crevice; (9) epithelial nodules; (10) mobility of varying degrees; (11) various changes taking place in alveolar bone; (12) distended veins in the alveolar mucosa giving rise to a purplish color in the septal gingiva and traceable for a considerable distance into the alveolar mucosa; (13) proliferative gingivitis, and (14) linear depressions.

Diagnosis depends for its success not only on the recognition of subjective and objective symptoms but also on a knowledge of mechanical relationships and roentgenographic diagnosis.

Before occlusion is discussed it is

important to mention a few clinical suggestions that might prove helpful in treating periodontal disease. It is important to consider (1) whether one is dealing with a pathologic or physiologic condition. (2) The age of the patient is important as often persons of advanced age will show normal physiologic bone absorption and wear of the tooth surface. This must not be confused with pathologic conditions. (3) The patient's occupation might have a bearing on the case. (4) The tone and vitality of the periodontal tissues must be carefully observed. (5) The teeth to be treated should have adequate support from adjacent teeth. (6) It is necessary to determine whether it is possible to obtain occlusal coordination. (7) The patient's willingness to cooperate is important. (8) Nonvital teeth are poor risks for periodontal treatment. (9) If the tooth can be depressed in the socket and moved from side to side the prognosis is unfavorable.

Roentgenographically, (1) where the bifurcations are involved on posterior teeth the prognosis is unfavorable. (2) At least half the bone should be left to render prognosis favorable. (3) Rarefied areas about the apexes of teeth will often indicate an unfavorable prognosis. The prognosis may be unfavorable in one instance and favorable in another, depending on the control of all factors involved. Failure to secure tightening of the teeth after a complete rest is an indication of either cementum absorption, pulp infection, or extreme loss of bone. The amount of pus has little relationship to the prognosis of the case. Usually after occlusal equilibration and instrumentation the discharge of pus will cease.

In order to obtain satisfactory pictures in photography, it is first necessary to balance the camera properly, and this depends on the stability of the tripod. Each leg is adjusted to give the camera support. Similarly the treatment of periodontal disease may be compared to the camera in its dependence on a tripod of three factors: (1) the removal of all factors that cause a lowered resistance; (2) an understanding and application of the principles of scientific instrumentation, and (3) the raising of tissue resistance. Without the combined influence of these factors treatment in the long run is doomed to failure. The building up of tissue resistance may be accomplished by the proper use of the toothbrush and correction of diet; scientific instrumentation removes deposits and suppuration, and the establishment of occlusal coordination removes an important etiologic factor.

(End of First Installment)

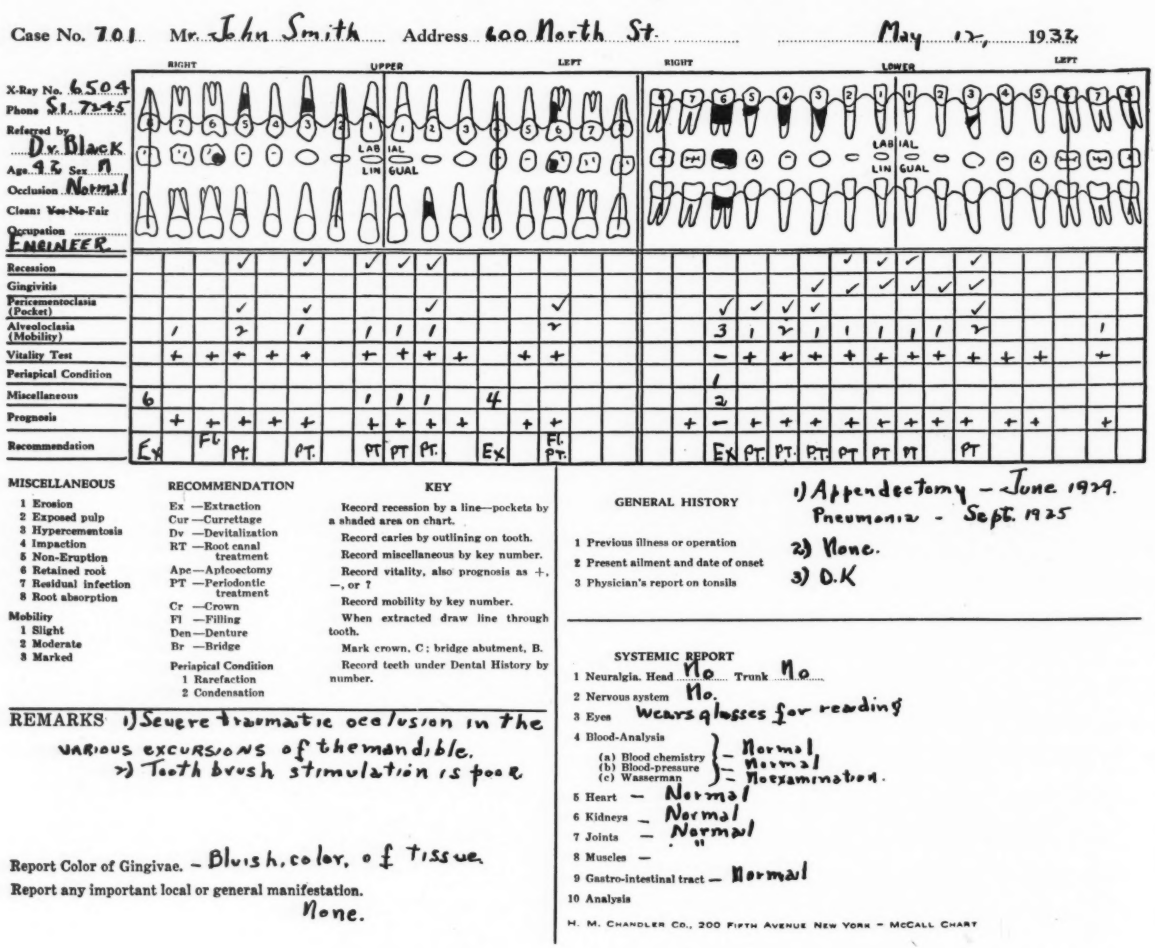

Fig. A —Record chart which is used to record all symptoms of disease.

Fig. B—Vincent's infection. Note yellowish white necrotic membrane on gingival margin and between teeth.

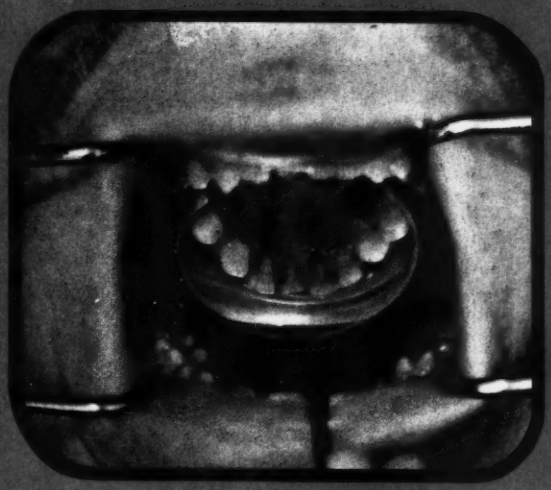

Fig. C—Vincent's infection on the lingual surface of lower incisors.

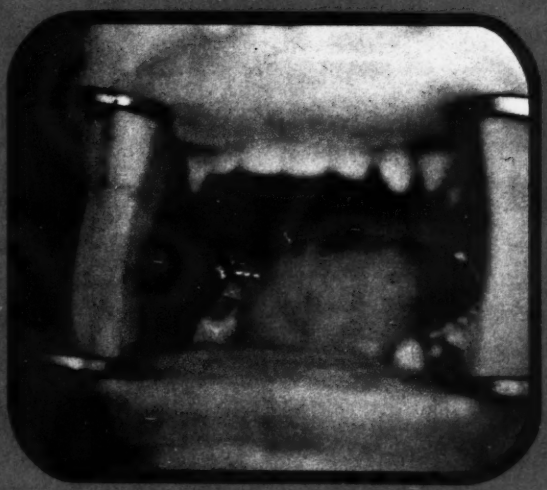

Fig. D—Vincent's infection in the muco-buccal fold of right side.

Fig. E—Venous congestion and proliferation due to calcareous deposits. Note calculus on upper right lateral and cuspid, and around gingival margins of lower teeth.

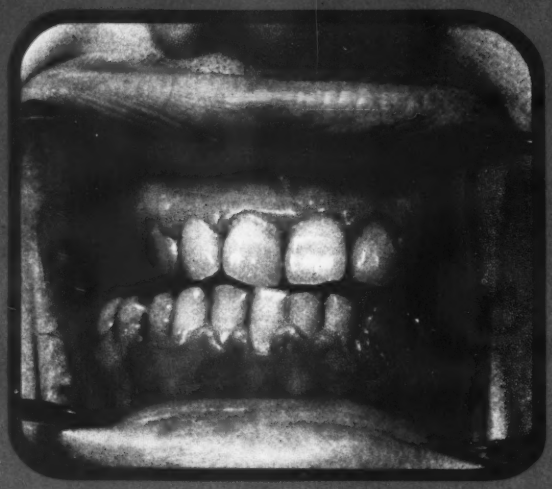

Fig. F—Proliferative gingivitis. Note recession about lower right central which is traumatized.

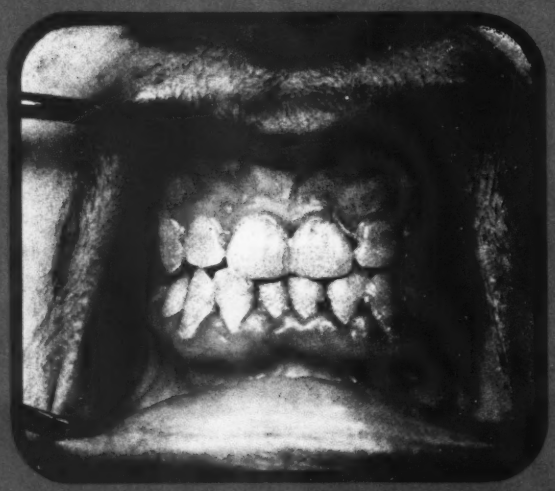

Fig. G—Severe gingivitis characterized by red and edematous tissue. Note calcareous deposits and green stain.

The Editor's Page

THESE words are being written in the strenuous closing days of an important national election. They will appear in print about a week after the returns are in. When the tumult has died and the short-lived acrimony is forgotten is the time for a serene evaluation of the mechanism of American politics and what they mean in the life of the professional man.

We start with the premise that politics should be of a decided interest to the professional man and that the professional man should be interested in politics. This is not advice to the dentist that he should run for office, for instance, or that he should concern himself with the minor details of practical politics. The interest that he takes in affairs should first be that of an intelligent citizen and second as a person whose professional activities might easily be placed in jeopardy by political quackery or connivance. The fact that we live in a society where politics is the "science of the second best" should be of sufficient warning to us to be alert to protect our interests—as citizens and as professional men.

One reason, perhaps, why able men in business and in the professions are politically indifferent is they observe that in science and technologic development progress has been more direct, more rapid, more honest and realistic than in government. This indifference to affairs or impatience with it has produced an unwholesome reaction in American life: Government is left to the rule of the "second best," while the more able men are attracted to business or to the professions.

Hertzler[1] states the case thus: "Since he (the average citizen) thinks little for himself he becomes a fundamentalist in politics, using the doctrines of government established by an agricultural and stage-coach people . . . He acts on the basis of stereotypes or of a public opinion manufactured by propaganda and counter-propaganda working upon his traditions, prejudices, aversions or his inertia."

This trenchant characterization of the average citizen too often applies to the more-than-average citizen who because of native intelligence, educational opportunity, or cultural advantage should react superiorly. During the intense campaign just ended we can recall professional men who submerged their scientific point of view and approached the important problems of government with the attitude that is the antithesis of the scientific method. In substitution for the cool and balanced thought with which they approach their vocational problems we find these men following their "traditions, prejudices, aversions, or inertia" in recording their attitudes toward government.

Why does the editor of a technical magazine in the dental field take it upon himself to attempt any kind of interpretation of or to comment on the American scene that is outside dentistry?

We would be happy to assign the job to those who are professional in their field and it is certain that they would be more able. But somehow they have problems and interests of their own and cannot be seriously concerned about ours.

Because dentistry is integrated with all other contemporary activities we cannot consider dentists as persons who live in a vacuum untouched by outside forces nor can we conceive of dentistry as a profession that is practiced without regard to outside social and economic forces. "Each profession," says Whitehead,[2] "makes progress, but it is progress in its own groove. Now to be mentally in a groove is to live in contemplating a given set of abstractions. The groove prevents straying across country, and the abstraction abstracts from something to which no further attention is paid . . . People have lives outside their professions or their businesses. But the point is the restraint of serious thought within a groove. The remainder of life is treated superficially, with the imperfect categories of thought derived from one profession."

So on occasion an editor feels justified in "straying across the country," out of the "groove" to make a passing comment on a situation or an event that may be of interest or of danger to the profession. Never, we trust, will we lose sight of the fact that the function of a professional journal is the protection of the best interests of the members of the profession that it serves.

[1]Hertzler, J. O.: Modern Youth and the Research Spirit, *The Scientific Monthly*, March, 1931, p. 256.

[2]Whitehead, A. N.: Science and the Modern World, New York, The Macmillan Company, 1928, pp. 282-283.

AMALGAM RESTORATIONS

H. H. GODBERSON, D.D.S.
Northfield, Minnesota

ALTHOUGH a majority of the amalgams seen in the mouth are poorly "thumbed-into-hole fillings," amalgam as a means of saving or prolonging the usefulness of a vast number of teeth has been remarkable. It is unfortunate that our predecessors did not have a better knowledge of the quality of the materials used and that the technique was not the best so that the number of teeth saved might have been much greater. Amalgam has been unjustly condemned, but the condemnation of amalgam restorations is not new by any means. Eighty-six years ago the American Society of Dental Surgeons made a resolution[1] to rescind the "Amalgam Pledge," a pledge made in 1841 not to use any amalgam. The pledge enforced expulsion of all members refusing to sign it, and a large number were expelled. To substantiate the claim that amalgams should not be used as a filling material, the case was cited of John T. Smith who had a cavity in a lower molar filled with amalgam; a subsequent swelling occurred which grew to such dimensions that it hindered respiration. Respiration was finally cut off and the patient died. It was made clear to the jury by the attending physician that the mercury in the amalgam filling caused the death.

There are many indications that an amalgam alloy of good quality, properly manipulated, properly placed in a cavity, and properly finished should give as good service as the best gold inlay. A good amalgam restoration is better than the average gold inlay that is seen in the mouth of the average patient today.

Essential Federal and American Dental Association Specifications for Amalgam

General Requirements—(1) Thorough, smooth amalgamation in three minutes; (2) susceptibility to carving in fifteen minutes; (3) ability to take and retain a polish after twenty-four hours.

Composition—(1) Silver, from 65 to 70 per cent; (2) tin, from 26 to 29 per cent; (3) copper, from 3 to 6 per cent; (4) zinc, if used at all, up to 2 per cent.

Alloy-Mercury Ratio

The proportions of alloy to mercury used in making a proper mix of a certain material are generally indicated by the manufacturers. An alloy mercury gauge for any particular alloy may be safely used. The ratio of the weight of alloy used to that of mercury is given as 5:7, 5:8, 7:9, and so on. Sufficient mercury should always be used in order to have a plastic mix at the end of a three-minute trituration. The alloy-mercury ratio may vary by having much less mercury in the final placing of the material without causing any appreciable effects in the setting characteristics of the alloy. The setting time may also be prolonged by adding a larger portion of mercury, provided this addition of mercury is made before the material has started crystallization. The addition of mercury is indicated in the insertion of large restorations, thereby giving the operator sufficient time to make his manipulations.

Mechanical Trituration

Mechanical mixing gives an amalgam that shrinks more on setting than if the same material were mixed by hand. This is of great importance from the standpoint of permanent adaptation for, of course, an ideal amalgam should never shrink. The small difference in time consumed between mixing by hand and with a mechanical mixer does not justify taking a risk of greater shrinkage.

The pestle and mortar with hand pressure is the best mixer for amalgam. Undoubtedly mixing in the palm of the hand is more effective but the possibility of contamination is greater because of perspiration and squamous epithelial cells. Undue prolongation of trituration tends to cause added shrinkage during the setting period.[2] By two-minute trituration in the mortar I do not mean heavy grinding. A heavy grinding pressure breaks up the alloy particles, and this heavy pressure will produce heat, thereby causing shrinkage.

In placing the filling material in the cavity the general tendency has been to advocate extremely high pressure. This has been done because it is assumed that the more pressure exerted, the stronger the filling becomes; but it is true that increasing the pressure beyond from three to five pounds does not increase the crushing strength and the lighter packing pressure will show an expansion of the material.

Technique
Disto-Occlusal Cavity in Lower First Molar

Fitting the Matrix—A thin metal band of the proper height is fitted occluso-gingivally with the occlusal border 2 or 3 mm. above the occlusal surface of the tooth. After the band is in place the location for the contact points is determined, the matrix is removed, and a hole is punched through it with the rubber dam punch, the next to the smallest hole being used. With crown scissors a V-shaped slot is cut out from the occlusal edge down to this hole and with the scissors the cut is carried slightly beyond the hole.

Adjusting the Matrix—The tooth is isolated with either a rubber dam or cotton rolls. This matrix is adjusted and held in place either with matrix retainers especially made for this purpose or by tying the matrix on with dental floss. If dental floss is used, naturally, it must be placed gingivally to the contact point. If the matrix retainer is used it will be necessary to use a wedge to retain the matrix firmly against the tooth at the gingival margin. An orangewood polishing point, number 3, is easily adapted to this purpose. These points are cut on the curve and adapt themselves to the contour of the tooth without much altering. The wedge should be placed from the lingual as the embrasure is the greatest on that side. If previous separation has not been made, this wedge will give sufficient separation if forced in tightly, thereby making a close contact after the restoration is finished.

Filling the Cavity—When the cavity is dehydrated and sterilized the filling material is inserted. A small portion of the amalgam is first carefully packed into all sharp angles with the small-angled, flat-faced in-

[1] Flagg, J. Foster: The Amalgam Question, *Dental Cosmos* 24: 237, 1882.

[2] Bureau of Standards, Technologic Paper 157.

strument. When the angles are well packed more amalgam is added, and round burnishers which are small enough to get into the proximal surface of the cavity are used. With a rotary motion and fairly light pressure the remainder of the cavity is filled. It is well to express the excess mercury from the portions of the amalgam as they are added.

Removing the Matrix—As soon as the cavity is filled with amalgam the matrix should be removed. This is done by opening up the matrix retainer or by cutting the floss with which the matrix has been held in place with a sharp knife. The lingual portion of the matrix band is grasped with a pair of heavy pliers; with either another pair of pliers or the fingers the buccal portion of the matrix band is grasped, and by giving a twisting pull distally and gingivally the matrix band will tear gingivally to the contact point letting the buccal one half be withdrawn buccally and the lingual half lingually. In so doing the contact point is not disturbed.

Contouring the Restorations—The amalgam is still fairly workable at the end of this time, and as soon as the matrix is removed the lingual and buccal line angles are given attention by burnishing in a rotary motion with a flat-faced instrument. A drawing motion from the amalgam to the margin should not be used. At this time the filling is also contoured on the proximal and all overhanging amalgam is removed at the gingival. This is done fastest and most effectively by using the large curved end of the explorer but the contact point should not be touched at the first sitting. The occlusal surface is then carved.

By this time the amalgam has been setting for about five minutes and the height may be tested for proper occlusion. Many otherwise good amalgam restorations are ruined at this point. The patient should be instructed to close slowly without any force on the articulating paper.

Finishing Restoration—An amalgam restoration should not be finished and polished until it has set for at least twenty-four hours, at which time the detail carving on the occlusal should be carried out. All the interproximal spaces except the contact point should be smoothed down with cuttlefish discs, and the gingival margin should be smoothed with fine strips. The mechanical separator is then placed, and the contact point is finished with fine strips, not discs. It is impossible to get into the sulci on the occlusal surfaces with discs so orangewood points are used with pumice placed in the handpiece.

After all scratches are eliminated

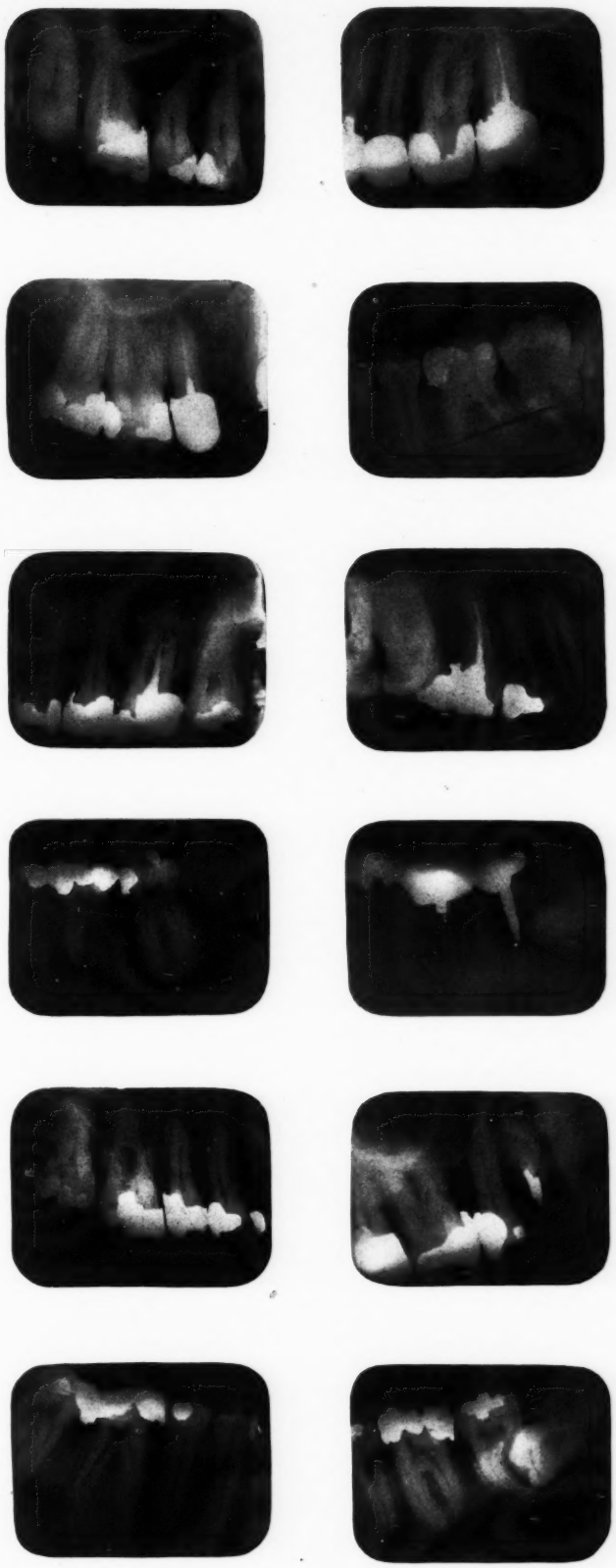

Fig. 1—Roentgenograms of amalgam restorations showing large overhangs as a result of improper technique.

the final polishing is done with a mixture of one-half part tin oxide with one-half precipitated chalk with sufficient water to make a thick paste. This is applied with a stiff Crescent polishing brush.

Conclusion

That millions of good alloy restorations exist cannot be denied but when some authorities[3] assert that 90 per cent of the approximal occlusal fillings exhibit faults, and when every dentist in practice has seen too many faulty fillings there is need for improvement. The following are some of the reasons for failures:

1. Failure to carry out proper cavity preparation.
2. Failure to sterilize the cavity.
3. Failure to protect pulp when necessary.
4. Imperfect amalgamation.
5. Failure to use a proper matrix.
6. Failure to make proper contact.
7. Failure to restore the anatomy of the filling according to that of other teeth in the mouth.
8. Failure to remove overhanging margins especially at the gingival.
9. Failure to finish and polish the filling at a second sitting.

[3]Harper, William E.: Successful Management of Quicker Setting Amalgam, *Dental Survey* 7: 35-7 (January) 1931.

Doctor G. V. Black says in his *Operative Dentistry:*

The idea that amalgam is a cheap filling to be done quickly in any old way should be discarded forever. The dentist should have the same pay for time in making amalgam fillings as in making gold fillings, and take the time to do it well. If he does his duty as well, the service to his patient in proportion to the time employed will be just as valuable.

Fillings properly made of modern amalgam are a class second to gold (foil) in their durability and in their protection against the recurrence of caries. The difference is that the amalgam filling is more difficult to make perfectly. It is more difficult to learn the manipulation; and, even then, it is more difficult to secure perfect results regularly, filling after filling.

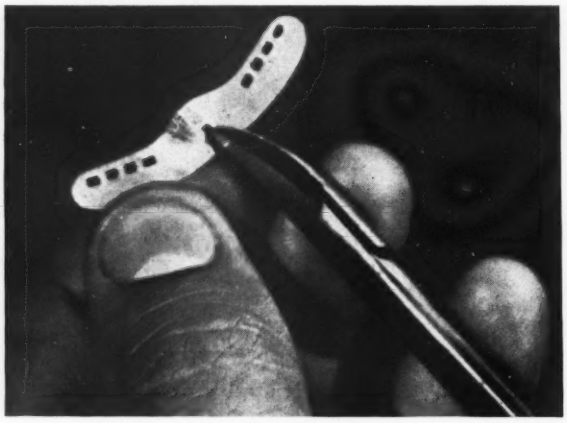

Fig. 2

Fig. 3

Figs. 2 and 3—After a matrix of the proper height has been selected the place of contact is determined. A hole is made with the rubber dam punch and a V-shaped section, with the wide portion of the occlusal surface, is removed. A slight slit should be made gingivally to the punched hole.

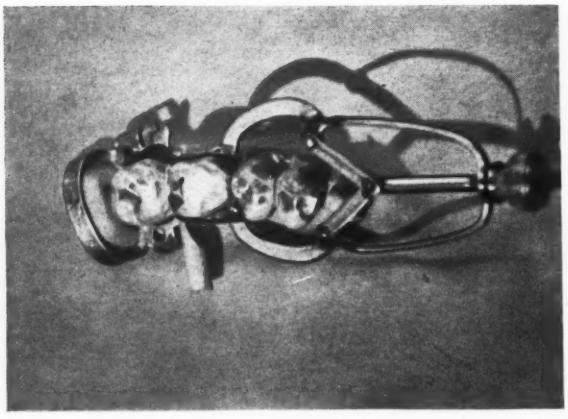

Fig. 4

Fig. 5

Fig. 4—Cavity prepared with matrix held in proper position with patrix retainer and properly shaped orangewood point, number 3, at the gingival.

Fig. 5—Removing matrix: As soon as the cavity is filled the matrix should be removed. The wood wedge and matrix holder are removed. The lingual portion of the matrix is pressed against the tooth and the finger and then the buccal portion is grasped with a pair of orthodontia pliers and a twisting pull is made away from the restoration, gingivally. This will cause the matrix to tear through, beginning at the little slit made with the crown scissors gingivally to the contact point. After the buccal portion is removed the lingual portion may be withdrawn with practically no resistance, and the amalgam contact has not been disturbed.

DENTAL ASSISTANTS AND SECRETARIES

ELSIE GREY

Elsie Grey will be glad to hear from any readers, dental assistants, secretaries, dental hygienists and dentists. Questions are just as welcome as suggestions. It is hoped that this department will provide a free and helpful exchange of thought on new and better methods in dentistry. It is your department and we want you to take the fullest advantage of it. Write to Elsie Grey—she will help you.

QUESTION—I have been a dental assistant for almost a year, but am still self-conscious when I have to greet new patients or salesmen in the reception room, especially if there are other patients waiting. How should I greet these new patients so that they may feel at ease? How should I greet the salesmen, and how can I tell them in a nice way that the doctor cannot or does not care to see them? Also, what can I do to keep my instruments from tarnishing in the sterilizer? What will restore their brilliance when tarnished?

ANSWER—The matter of acquiring poise and self-confidence when greeting or speaking to people for the first time is one that can be attained quickly if you will cease thinking of them as new and strange. Just think of them as patients who have come to the office for aid and comfort, and that you who are a part of that aid and comfort have nothing about which to be self-conscious. It is one of your duties to welcome them to the office where as a part of your work you are the "office hostess."

One of the best aids in acquiring poise is the feeling that you are looking your best in the part you are playing in the management of the office. If you wear a neat and spotless uniform, hose, and shoes, you will acquire a dignity in the patient's eyes, and you will lose any degree of inferiority complex you may possess. Learn to wear a natural smile, not a grin. Cease thinking of the people who come to the office as "different," and stop thinking of yourself. One can greet people pleasantly and still be impersonal. They aren't personal callers. And even if they were, it is as unbecoming to be diffident, to lack confidence in oneself, as it is to be bold. Suppose you were the patient or sales person. How would you expect to be greeted? How are you usually received when the situation is reversed? The caller always states his business without much prompting, and as you know the situation in the office better than anyone, you must use your own judgment in replying. No one can give you fixed expressions to meet every occasion. As for putting patients at their ease in the reception room, it is only the rare case that will require any special consideration, as you must have found in the experience you have had. Most people are at ease and make themselves comfortable without much ado.

As for the people who may be waiting in the room when you greet a newcomer, just forget them. You probably greeted them in exactly the same manner; therefore there is nothing to attract their attention, assuming that they are interested in what you are saying.

2. Make certain that your sterilizer is thoroughly cleaned each day and filled with fresh water. If you have to use hard water, soften it with a little borax or any of the prepared "water softeners" that are on the market for that purpose. Scrub all instruments thoroughly with a stiff brush, soap, and hot water, before putting them in the sterilizer, and do not allow them to remain there longer than necessary for sterilization. Once a week polish all the instruments with a little rouge on a cloth or chamois wheel attached to a laboratory lathe; then sterilize and replace in the cabinet. If there is an occasional dark spot on an instrument, use a little moistened flour of pumice before you use the rouge. If instruments are corroded by rust or neglect, they will have to be renickeled.

TWO HELPFUL HINTS

Selma Dahlgren, Stamford, Connecticut, suggests another method for removing compound from trays. Remove the bulk of the compound by warming in hot water, then cover the tray with vaseline; flame over the Bunsen burner, and wipe off with a cloth or tissue paper. Use the vaseline again and repeat the flaming if necessary.

QUESTION—Can you suggest some literature for our reception room table? We have a great many children in our practice.

ANSWER—Patients as a rule do not have much time for reading if the practice is one that is run on appointment schedule; therefore, we suggest magazines with illustrations and short text. The *National Geographic* is always enjoyed, as well as publications dealing with the home, garden, interior decoration, travel, and nature studies. For children, *Youth's Companion* is a favorite with the boys; the *Child's Magazine,* and books with pictures of birds, animals, trees, flowers, and fish. Children like fairy tales and many pictures. Any librarian will help you to select the proper books. As a reserve for restless youngsters we suggest two or three games in which you can soon create an interest without seeming to do so; these will keep them busy and quiet. I suggest that the magazines and books be placed in leather bindings. The investment will be more than justified by the appearance.

CLASSIFICATION AND ROENTGENOLOGIC INTERPRETATION OF DENTAL SURGERY*

W. A. COLBURN, D.D.S.
San Francisco

DENTAL surgery may be said to be that branch of the dental science which treats pathologic conditions of the teeth and associate parts by manual operations. It consists of (1) the removal of the teeth, (2) elimination of the diseased tissue, (3) reshaping the alveolar bone to a symmetrical arch, (4) smoothing sharp, bony prominences, and (5) suturing the soft tissue so as to be favorable for healing and to produce the proper height for artificial base plates.

1. *Removal of Teeth*—Teeth that are easily removed may be extracted in the usual manner with forceps or elevators. One should begin with the central incisor on one side and finish that side before starting on the other, thus dividing the operation into four separate steps.

When large diseased areas are present, or when considerable force, which may fracture the roots and alveolar process, is required to remove the teeth, it is advisable to make an incision, lay back the gum tissue, and remove sufficient bone from over the roots so that their removal is accomplished more easily and free access is attained to the contiguous areas.

2. *Elimination of Diseased Tissue*—When diseased tissue adjacent to tooth roots is removed the principles of surgery, in contradistinction to blind curettement, should be employed if rapid healing and regeneration of new bone is to be expected. Thoroughness is the key in this step, but the ridges and plates should not be entirely removed. Normal bone, whether it is sharp, thin, isolated, or intact, should be left if it is firmly attached to a healthy, bony structure, because it will act as a matrix for the regeneration of new bone.

3. *Reshaping the Alveolar Process*—The misshapen surface of the alveolar process can be reshaped and smoothed with a rongeur and broad bone files to a symmetrical arch. It is not necessary to remove more than 3 mm. of bone in the majority of cases, and possibly 5 mm. in one that presents extraordinary bony prominences.

An equivalent of about one year of absorption is accomplished by surgery.

Healing will take place in three or four weeks if the height of the ridges is reduced, if the fullness of the region of the six front teeth is reduced, and if undercuts in the molar region are removed.

The space gained is sufficient to allow the prosthetist to place artificial teeth of the proper length, width, and ridge-lap in restoring the natural arch and articulation.

The esthetics may be improved as artificial teeth can be rotated or depressed until the high lights and shadows are pleasing, or, at least, resemble the natural teeth of the patient.

4. *Surgical Reduction*—Surgical reduction of the ridges creates sufficient space so that the artificial teeth may be placed in the correct position to the ridges anteroposteriorly. This brings the first lower molar in its proper location. The positions of the first mandibular and second bicuspid are just as important for occlusion in artificial substitutes as they have been recognized to be in the natural teeth.

The placing of the mandibular first molar and second bicuspid in their correct positions anteroposteriorly to the arc and curve, and the harmonious occlusion with the maxillary teeth will reduce the troublesome soreness of the mouth to a minimum.

4. *Suturing*—In the majority of cases little suturing is necessary as free drainage is imperative. When indicated, however, the loose, interrupted stitch may be used. Only enough suturing should be done to keep the bone from being exposed. Care should be taken that the tendon-like attachments of the soft tissue may not be placed too near the crest of the ridge.

Clinical observations and roentgenologic interpretations of alveolar roentgenograms reveal interesting typical cases, as follows:

1. Disuse alveolar atrophy.
2. Alveolar atrophy.

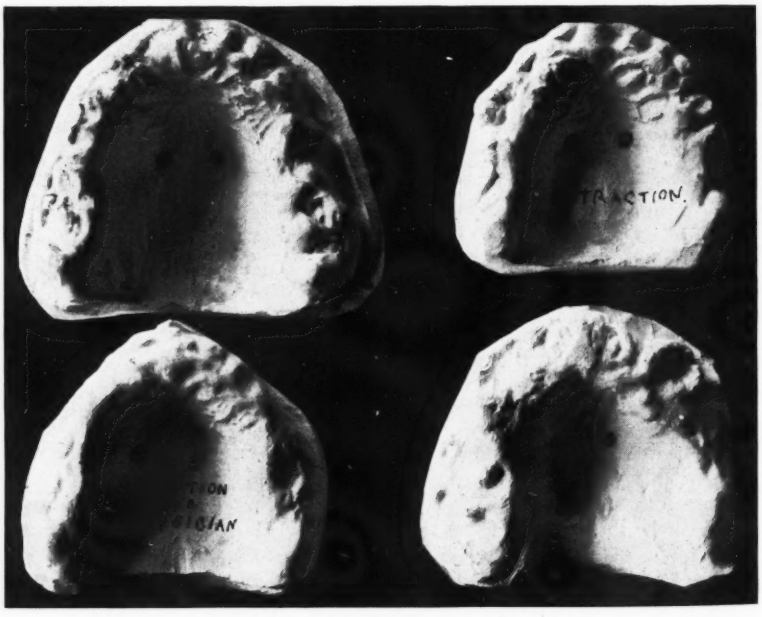

Fig. 1—No surgical preparation.

*The roentgenographic work for this article was done by Mr. Franklin W. McCormack and Mr. Leonard Frank.

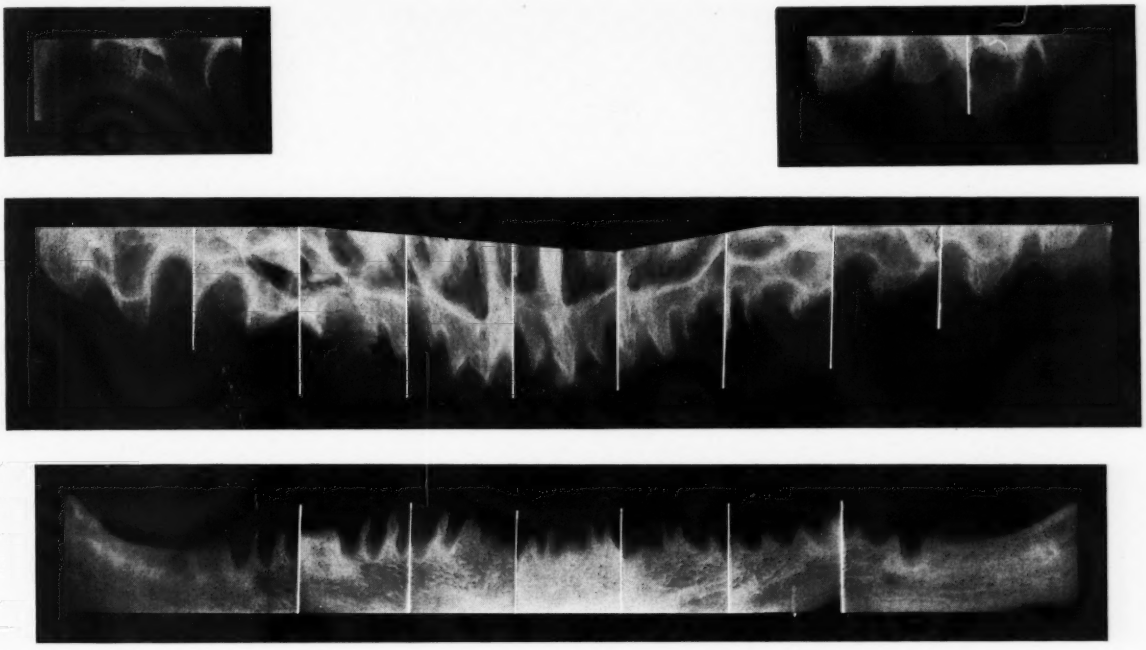

Fig. 1 A—Roentgenographic evidence of case without surgery.

3. Alveolar atrophy in the edentulous.
4. Serrated alveolar atrophy.
5. Complete atrophy.
6. Osteomalacia.
7. Pyorrhea.
8. Pericementomas.
9. Cystic pericementomas.
10. Alveolar hypertrophy.
11. Soft tissue hypertrophy.

Disuse Alveolar Atrophy

Disuse alveolar atrophy may be diagnosed by the facts that the teeth seem to have more than ordinary movement on digital pressure; there is a tendency to separate as in the pyorrhea type, and there is a history of failure of mechanical restorations.

The cancellous bone in the roentgenogram (Fig. 5) appears more open, homogeneous, and slightly radiolucent.

Owing to the rapid change of the arch in disuse alveolar atrophy, surgical reduction seems contraindicated unless the demand of esthetics is imperative.

Alveolar Atrophy in the Edentulous

Atrophy of the alveolar ridges may be diagnosed by (1) the persistent sore spots, (2) soft, flabby gum tissue, commonly known as soft ridges, (3) the tendency of dentures to have loose adhesion in a few weeks or months, and, in some cases, (4) neuralgic pains.

Roentgenograms of the alveolar walls reveal sharp, bony prominences and radiolucent areas in which the cancellations are more homogeneous than the irregular cancellations of the more normal bone.

The technique of the operation indicated in atrophy of the alveolar ridges is as follows: (1) an incision is made lingual to the crest of the ridge; (2) the tissue is laid back; (3) the diseased bony areas and roots are removed; and (4) the remaining bone is smoothed with a file. (5) Free drainage is allowed, which means little, if any, suturing.

Serrated Alveolar Atrophy

Although serrated alveolar atrophy in the edentulous occurs in both maxilla and mandible, from a prosthetic standpoint it seems to give the most trouble when in the region of the ten front teeth of the mandible. The condition may be described as a thin, sharp ridge of process that stands

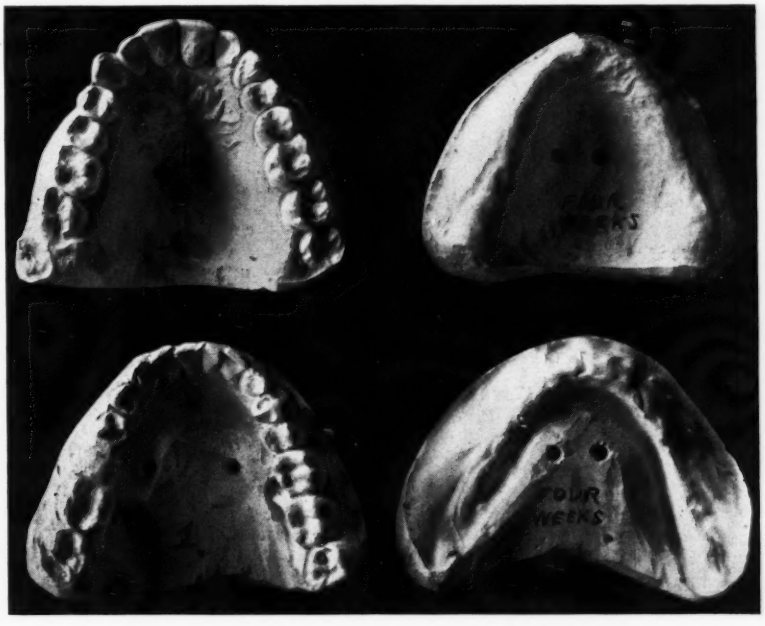

Fig. 2—Surgical preparation in a case of periapical disease.

Fig. 3—Surgical preparation in a case of periodontal disease.

Fig. 4—Surgical preparation; esthetics improved.

above the general line of the normal arch. The ridge may or may not be covered with hypertrophied soft tissue, but generally exhibits sore spots when pressure is applied.

The roentgenogram (Fig. 8) shows the condition as a thin, serrated edge of bone, from 1 to 4 mm. above the general outline of the alveoli, and contains the usual radiolucent areas or dark spots.

Serrated alveolar atrophy apparently is the result of incomplete surgery following the removal of the teeth and diseased tissue.

Patients complain of soreness of the mandible in the region of the ten front teeth. They are unable to bring pressure on dentures that are uncomfortable even when not used in mastication.

The surgical procedure consists of an incision on the crest of the ridge; the soft tissue is retracted; the sharp bone is reduced with rongeur or chisel; the soft spots are curetted; the remaining bone is smoothed, and the soft tissue sutured to place.

Osteomalacia

The osteomalacia type of case can be diagnosed only by the aid of the roentgenogram as no symptoms are noticeable in the mouth except that the ridge seems to be rounded as though swollen.

The cancellous bone in the roentgenogram appears as a homogeneous mass with small perforations or holes instead of the irregular, normal network. The outer layer of compact bone appears as a selvage, and, as a rule, is thin but firm.

When opened surgically, the bone is found to be soft and pale yellow. It is easily removed with a curet and, as a rule, contains no vascular supply; hence, little hemorrhage is noticed until healthy cancellations are reached, when the flow of blood may be excessive, necessitating the use of a bone hemostat.

Pyorrhea (Parodontitis)

Pyorrhea (parodontitis) is easily recognized by the looseness of the teeth, and in a majority of cases the condition is attended by a flow of pus

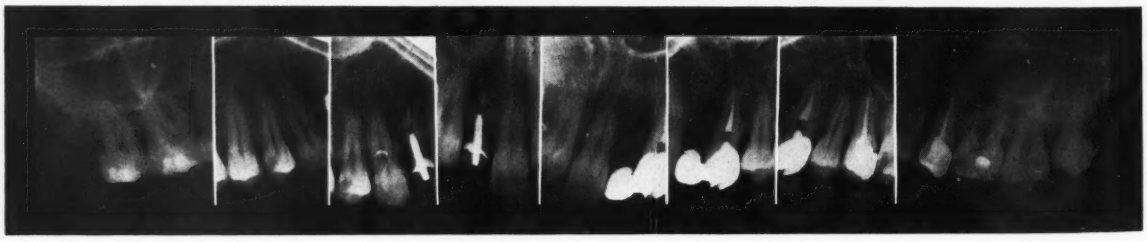

Fig. 5—Disuse alveolar atrophy.

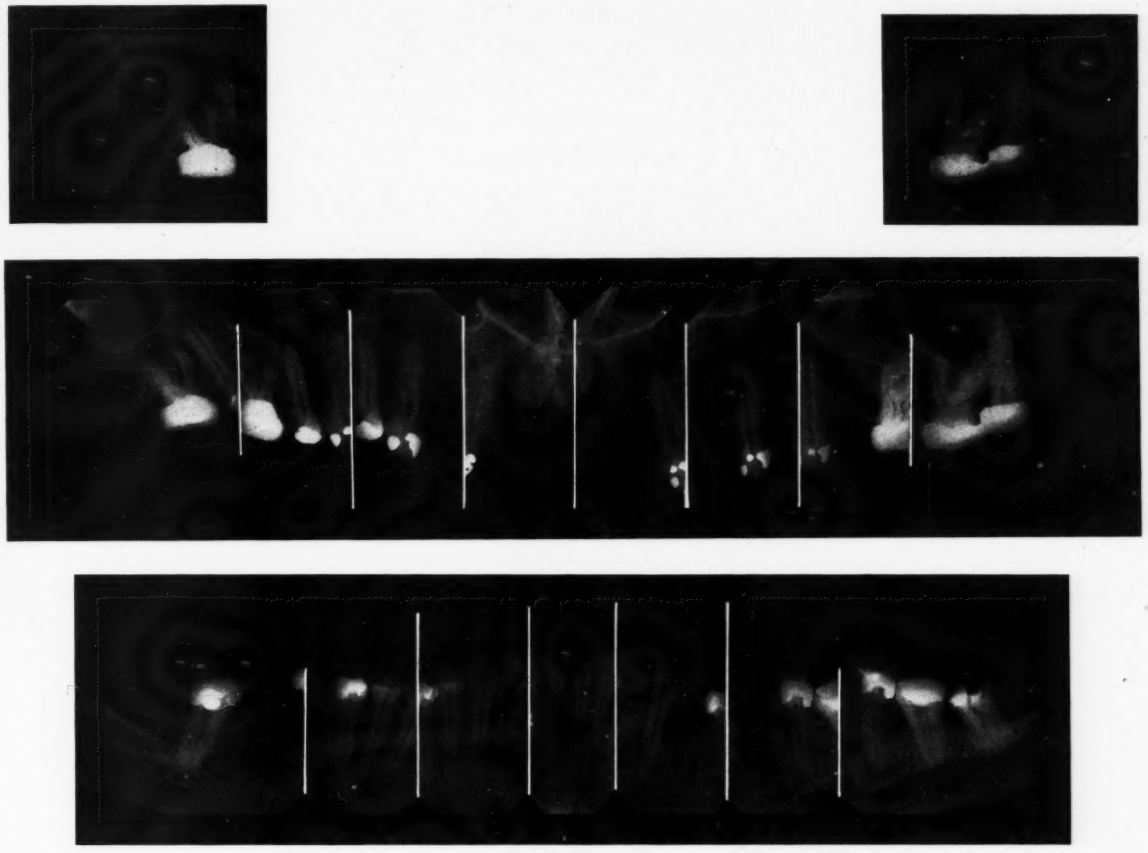

Fig. 6—Alveolar atrophy.

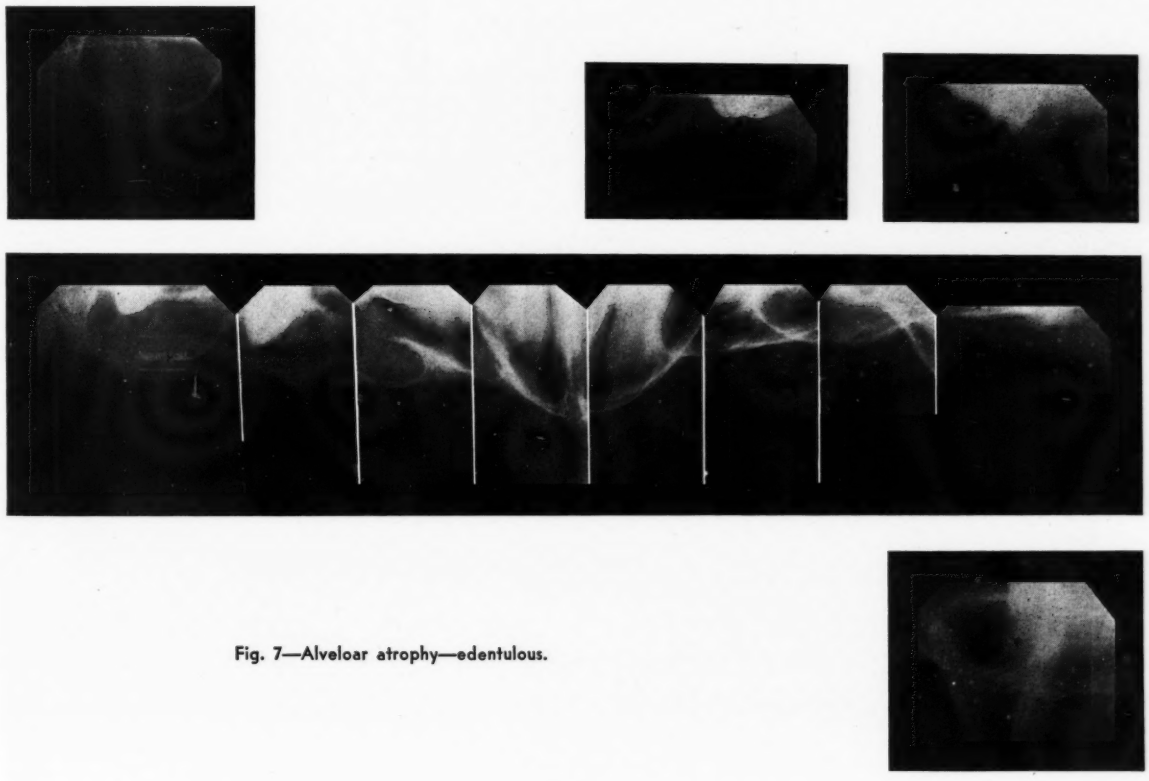

Fig. 7—Alveloar atrophy—edentulous.

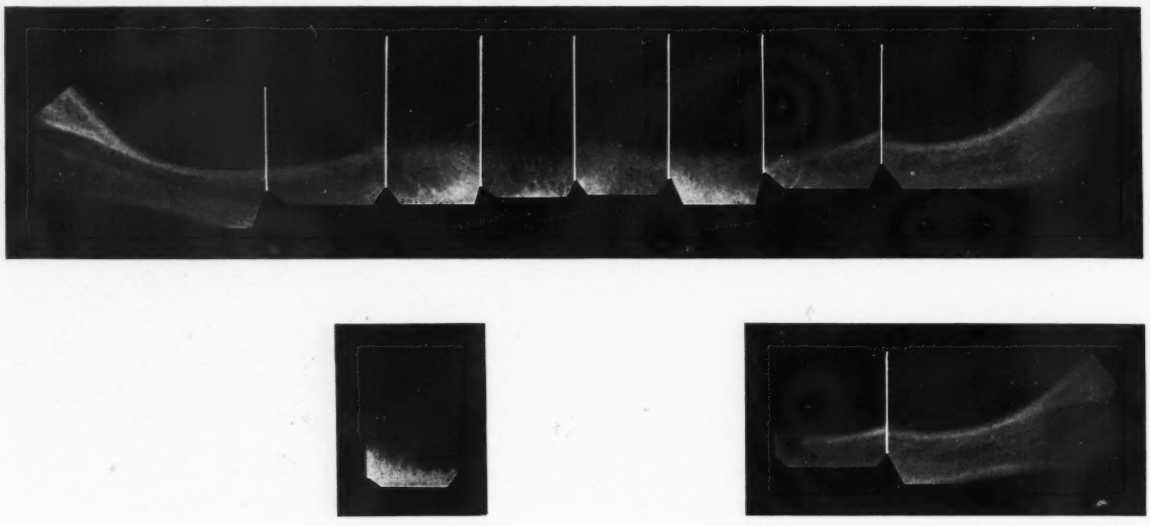

Fig. 8—Serrated alveolar atrophy—edentulous.

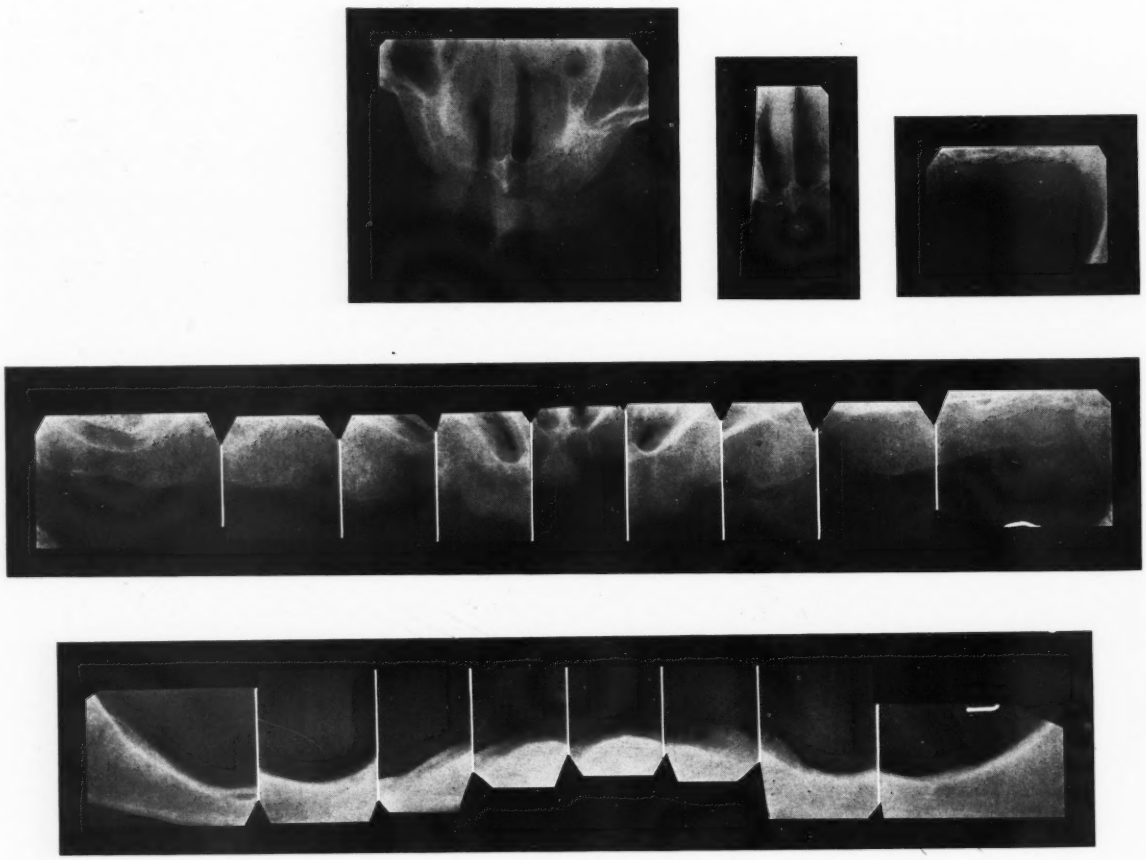

Fig. 9—Osteomalacia.

from the margin of the affected alveolus, and by deposits of calculi upon the sides of the denuded roots.

The roentgenogram (Fig. 10) shows a loss of the retentive structure, alveolar walls, and pericementum. In some cases a hypertrophy of the gum tissue is also revealed.

The teeth may be easily removed but care should be taken thoroughly to dissect the diseased tissue from the periosteum and alveoli, which will reduce to a minimum the shrinkage or changes in the alveolar arches.

The remaining disorganized tissue seems to have an absorbent influence on the alveolar bone, thus retarding the healing, and thereby making it necessary to construct several dentures or resort to relining every few months.

Pericementomas

As a rule, no visible symptoms of pericementomas or cystic pericementomas are found on ocular examination. In cystic pericementomas sometimes a slight swelling or fistula exuding pus may be noticed, which may or may not be near the site of the diseased area.

The roentgenogram (Fig. 11) reveals the pericementoma as a radiolucent area with the bony wall clearly defined.

Radical surgery is indicated in all cases of pericementomas:

1. The periosteum is dissected free from the bone and diseased tissue.
2. The teeth are removed, and the pericementoma is completely removed *in toto*.
3. Possible "dead" spaces are eliminated, the bone being shaped to symmetrical arches, and sharp, bony prominences smoothed with a bone file.
4. The operator is confronted with a lack of bony tissue instead of too much; therefore, the ridges and plates should not be entirely removed or obliterated needlessly. Normal bone, on the contrary, whether it is sharp, thin, isolated, or intact, should be left if it is firmly attached to healthy, bony structure. It will act as a matrix for the regeneration of new bone, and thereby aid in producing a more symmetrical ridge.

Cystic Pericementomas

Cystic pericementomas in edentulous areas may be diagnosed on ocular examination by a slight swelling or by a fistula exuding pus. When located in edentulous areas under artificial dentures a soreness or uncomfortable feeling may be the only symptom.

In the roentgenogram (Fig. 12) the cyst is revealed as a radiolucent area with the bony wall clearly defined.

Surgical removal of the cystic membrane and contents *in toto* is indicated. The technique is the same as for the more simple pericementomas. The large blood vessels and nerves should be avoided as much as possible. The remaining cavity is filled with new bone in from one to three years, depending on its size and the amount of remaining bony matrix.

Artificial dentures may be inserted

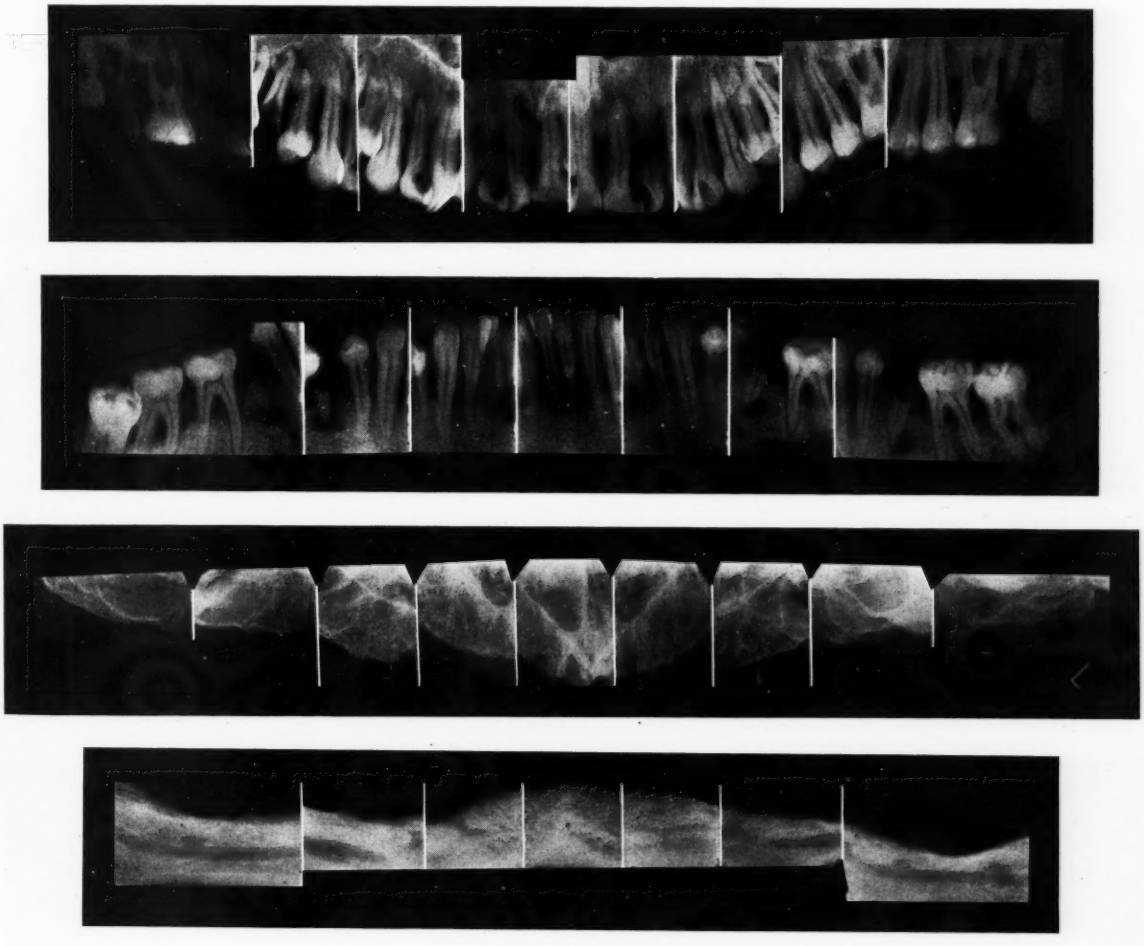

Fig. 10—Pyorrhea.

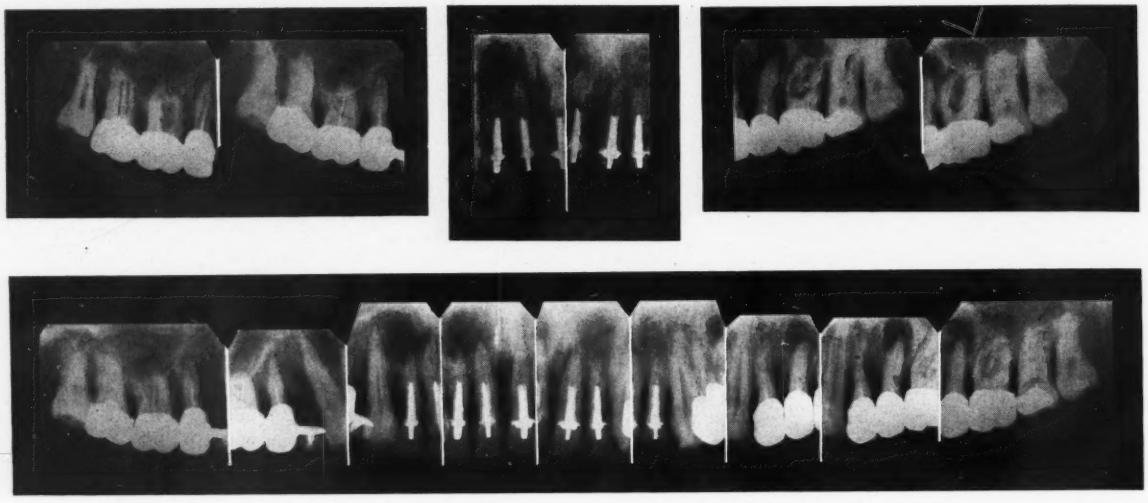

Fig. 11—Pericementomas.

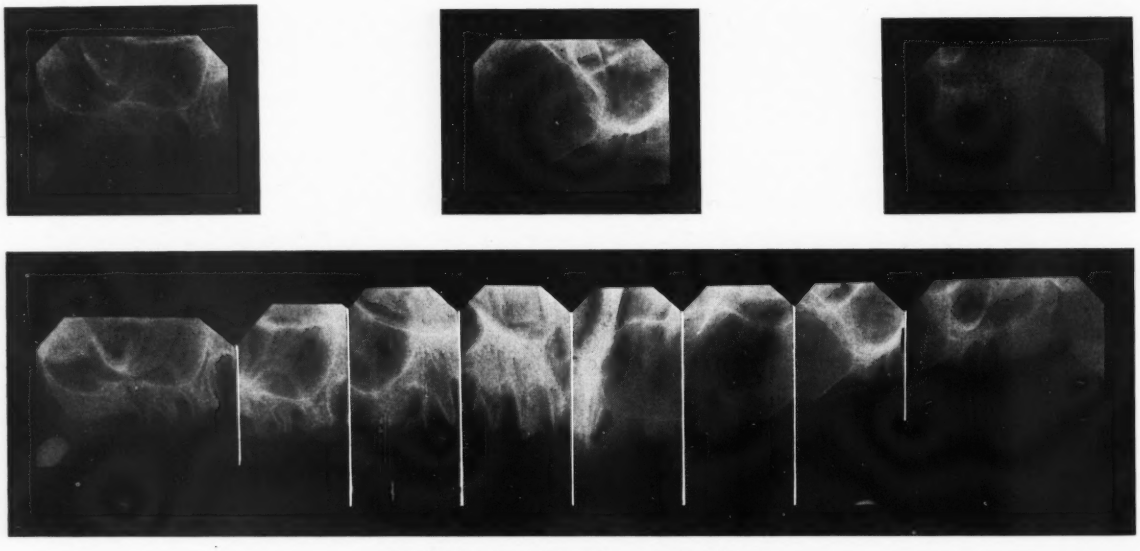

Fig. 12—Cystic pericementomas—edentulous.

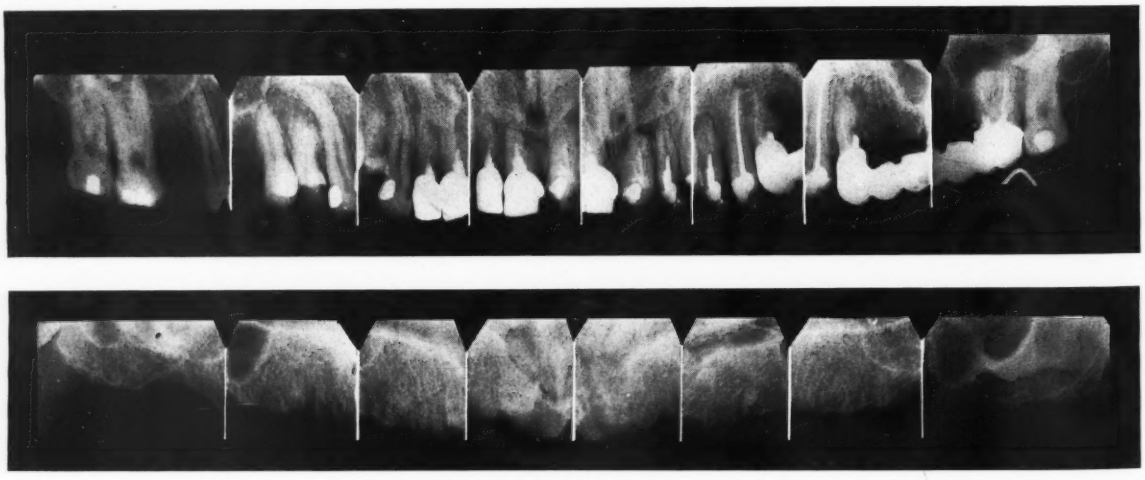

Fig. 13—Alveolar hypertrophy.

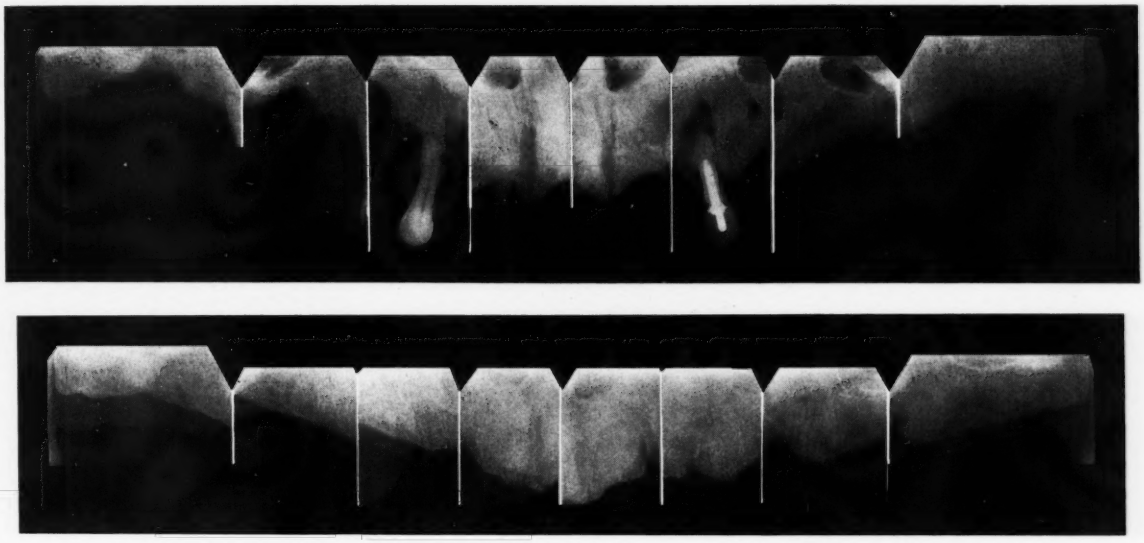

Fig. 14—Soft tissue hypertrophy.

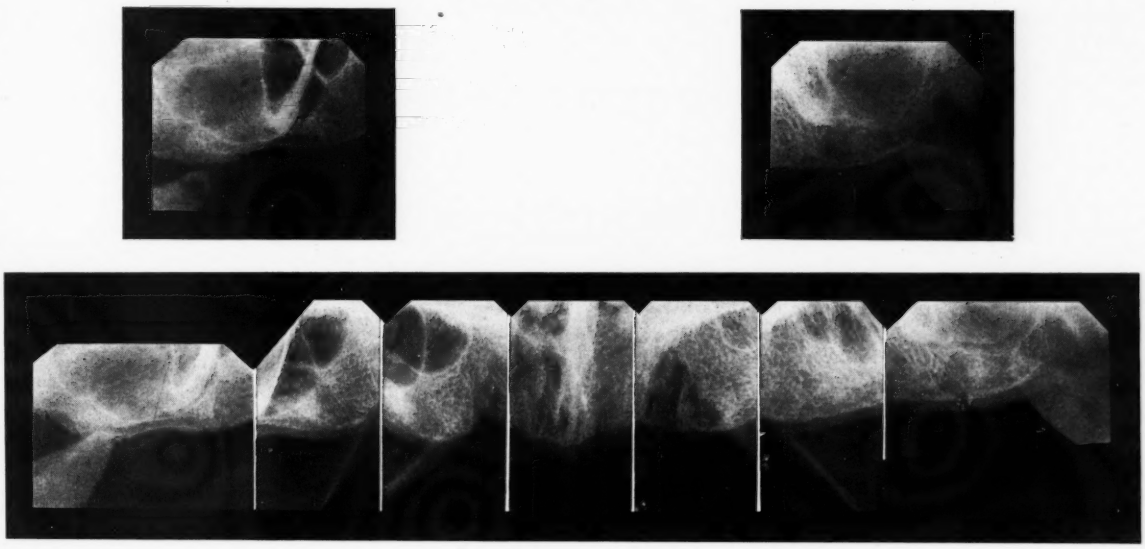

Fig. 15—Normal edentulous.

as soon as the soft tissue heals, which usually occurs in about four weeks in the average case.

Alveolar Hypertrophy

Hypertrophy of the alveolar bone is diagnosed by the radiopacity of the alveolar process as shown by the roentgenogram and by the difficulty experienced in tooth removal.

The arch, especially the upper, seems larger with increased thickness of the labial and buccal plates. Usually there is a decided roll of bone at the necks of the teeth, which takes on a hardness bordering on sclerosis or eburnation. The labio-lingual and bucco-lingual thickness remains after the teeth are removed, and is, therefore, usually favorable for the reception of the artificial substitute.

In cases of alveolar hypertrophy it is necessary to lay back a flap of the gums, and to chisel a part of the bone away from over the roots of the teeth before their removal is attempted. The arches are then reshaped and smoothed, and the soft tissue is sutured to place.

Although this type of case is the hardest to handle surgically, with regard to tooth removal, it is probably the most satisfactory class in which to build an artificial substitute, because, as a rule, little change in the arches is noticed during the first year. It is in this type of case that the "dry sockets" frequently occur.

Soft Tissue Hypertrophy

Soft tissue hypertrophy appears as masses of tissue of varying thickness in edentulous areas, and can be caused by incomplete surgery or ill-fitting saddles.

The roentgenogram (Fig. 14) reveals the tissue as a distinct shadow following the contour of the bony outline.

Surgical intervention is indicated in these cases as the thickened mass not only interferes with the construction and stability of the dentures, but also seems to exert an absorbing influence on the alveolar bone.

The surgical technique consists of a central incision along the ridge and careful dissection from within, until the flaps collapse to the bone, if possible. The flaps are left open about 2 mm. of apposition for drainage.

INDIRECT INLAY TECHNIQUE

L. W. GOCHENOUR, D.D.S.
Clarksburg, West Virginia

Fig. 1 (*Step* 1)—A copper band is selected that fits the tooth. This band is cut and contoured as one would trim and fit a band for a crown. Kerr's or S. S. White black modeling compound is used because these cool quickly and give a sharp impression. This is heated over a flame to a soft consistency, placed in the band, and forced over the tooth until some of the compound exudes from the bottom or gingival of the band. It is held there firmly until it is cool and chilled, and then removed.

Fig. 2 (*Step* 2)—An impression of the cavity or cavities is taken with inlay wax. The impression is completed with Solivite to include the adjoining teeth with the wax in position. The inlay wax is heated and forced into the cavity, covering practically the entire tooth, and left in position. A bridge tray carrying Solivite or a plaster impression material is placed over this. When the wax is set the impression material is removed.

Fig. 3 (*Step* 3)—An impression is taken of the occlusal third of the occluding teeth.

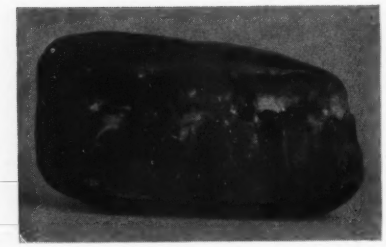

Fig. 4 (*Step* 4)—The bite or relationship of the jaws is taken with pink base plate wax.

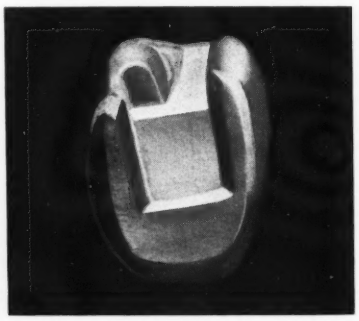

Fig. 5 (*Step* 5)—Amalgam is packed in the tube impression in about the same way that a cavity is filled; that is, by packing a small quantity at a time, and expressing all mercury. The amalgam is built up as much as possible in a cone shape. After it has set, the impression is separated; all excess is trimmed off, and the cone shape is completed with a few angles on it or is made hexagonal in shape.

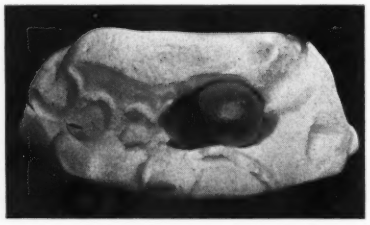

Fig. 6 (*Step* 6)—The amalgam model is placed in the impression. It will only go into the correct position if a good impression has been made, because the inlay wax is an accurate guide.

Fig. 7 (*Step* 7)—The impression is painted with a separating fluid and poured with model plaster. At this point one should be sure that the amalgam model can be removed from the plaster.

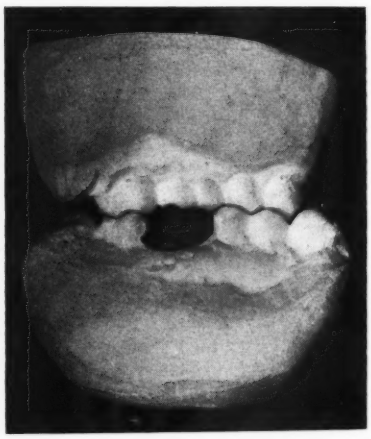

Fig. 8 (*Step* 8)—The impression is separated, and the casts are placed on an articulator by use of the bite taken in base plate wax.

The amalgam model is removed from the plaster, the cavity is oiled, and inlay wax is melted in it. The model is placed back on the articulator and carved for occlusion and contact. When the carving is satisfactory, investing and casting are done. The inlay is placed back on the model, swaged, and polished. It is ready for insertion into the tooth, without the necessity of a great deal of grinding to establish the contact and occlusion.

The indirect inlay technique described here is especially recommended in cases of two or three adjoining teeth with a close bite where larger restorations are to be made.

LETTERS

The copies of your magazine have really been a source of great pleasure to me and I certainly can think of no happier thought than keeping them intact.—S. E. ALPER, D.D.S., *Brooklyn, New York*

I am enjoying your magazine very much. May it be a great success!—R. E. HOPKINS, D.D.S., *Alton, Illinois*

Your magazine fills a long felt want.—GEORGE T. DYER, D.D.S., *Rumford, Maine*

You have a wonderful dental magazine and I look forward to its coming every month.—A. B. HARRINGTON, D.D.S., *St. Louis*

I wish to congratulate you on the inimitable style of THE DIGEST and the practicability of the subjects treated therein.—L. S. VINEZ, D.D.S., *Louisville, Ohio*

The appearance and contents of THE DENTAL DIGEST are so impressive and inspiring that I must preserve my copies.—H. C. BROCK, D.D.S., *North Platte, Nebraska*

I have been a reader of the old DENTAL DIGEST for years, but the arrival of the new DENTAL DIGEST certainly brought surprises that surpassed all anticipations. Its articles, interesting, brief, concise and directly to the point, with the accompanying artistic illustrations, surely mark a new era in the manner of presenting scientific literature to the average reader. Please accept my congratulations on this fine pioneering work you have so nobly undertaken.—H. E. PFEFFER, D.D.S., *Cincinnati*

I look forward to every issue of THE DIGEST. It is interesting from cover to cover. You are to be congratulated on the forward step you have made in dental publications.—S. B. HOPKINS, D.D.S., *Greenville, Alabama*

You have a wonderful magazine and I wish you success.—PETER A. FRANK, D.D.S., *Paterson, New Jersey*

The new DENTAL DIGEST is so beautiful and the photographs are so excellently done that I am regretting more and more that I did not get the January number. I was late sending in my subscription and this is probably the reason for my not receiving the first number.—J. DALLAIRE, D.D.S., *Quebec, Canada*

Your magazine is a work of art and a wonderful help to a busy man.—WM. A. CASH, D.D.S., *Helena, Montana*

Let me tell you how much I appreciate the improvements made in THE DENTAL DIGEST. I would not be without it.—ARMAND CLAIRMONT, D.D.S., *Beauharnois, Quebec*

I am enjoying THE DIGEST to the fullest, and would like to keep them for reference, so please reserve a binder for me with my full name.—ROBERT WILFRED MORGAN, D.D.S., *Poughkeepsie, New York*

The type and contents of your publication are such that you may have my order for a binder every year.

Your editor and staff must be congratulated for their very, very instructive and practical journal.—A. M. FLASCHNER, D.M.D., *Boston*

Of all the dental journals, THE DENTAL DIGEST, in its new form since January, is the dentist's biggest aid in book form that has ever been in existence. If I should be told that I can only have one dental journal, THE DENTAL DIGEST certainly would be my choice.—WM. F. VOSSELER, D.D.S., *Cincinnati*

You have a dandy magazine. Please place my name on your list for a binder.—LOUIS BECKERMAN, D.D.S., *New York*

Keep up the good work on your DIGEST—it really belongs.—A. E. KACZALA, D.D.S., *Chicago*

Let me thank you for the complimentary copy of DENTAL DIGEST that I received this morning. This is the first copy I have seen and I find it to be a remarkable magazine. I am enclosing a personal check in the amount of four dollars and twenty-five cents in payment of a year's subscription to DENTAL DIGEST, and for one of the DENTAL DIGEST binders.—L. P. WILSON, D.D.S., *Sinton, Texas*

Your magazine cannot be over-congratulated; because, in this field, I believe it is so distinctive, yet beautiful in its simplicity, and simplicity is Nature's first step, and the last of Art.—L. J. BELLEGANTE, D.D.S., *Victor, Iowa*

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS, OF AUGUST 24, 1912

OF THE DENTAL DIGEST
AT PITTSBURGH, PA.

Published monthly
For October 1, 1932

State of Pennsylvania, } ss.
County of Allegheny, }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared M. B. Massol, who, having been duly sworn according to law, deposes and says that he is the Publisher of THE DENTAL DIGEST, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of—	*Post office address—*
Publisher, M. B. MASSOL	1117 Wolfendale St., Pittsburgh, Pa.
Editor, E. J. RYAN, B.S., D.D.S.	1218 Pratt Blvd., Chicago, Ill.
Managing Editor, T. N. CHRISTIAN, D.D.S.	1117 Wolfendale St., Pittsburgh, Pa.
Business Manager, J. J. DOWNES	1117 Wolfendale St., Pittsburgh, Pa.

2. That the owners are:

DENTAL DIGEST, INC.	1125 Wolfendale St., Pittsburgh, Pa.
ORAL HYGIENE, INC.	1117 Wolfendale St., Pittsburgh, Pa.
M. B. MASSOL	1117 Wolfendale St., Pittsburgh, Pa.
LOUISE A. SMITH	Schenley Apartments
LYNN A. SMITH	1117 Wolfendale St., Pittsburgh, Pa.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

M. B. MASSOL, *Publisher*

Sworn to and subscribed before me this 24th day of September, 1932.

E. G. BURGDORF, Notary Public

[SEAL] (My commission expires March 6, 1935)

Of Interest

TO SUBSCRIBERS

THE December issue of THE DENTAL DIGEST will complete the 1932 volume. The usefulness of this volume will not cease at the end of the year but will continue to be just as valuable next year and in the years to come. That is why you should save each copy and arrange for some form of binding.

We are prepared to offer readers two forms of binding for their DENTAL DIGESTS—a binder that will hold all twelve issues of the magazine in removable form or a bound volume in permanent form. Many dentists will want both forms of binding but every dentist should arrange for at least one of these methods of preserving this valuable literature for future use.

In order to encourage the reading and preservation of important dental literature we have arranged four special combination offers that should interest every DENTAL DIGEST reader. Here they are; study them and choose the one that appeals to you.

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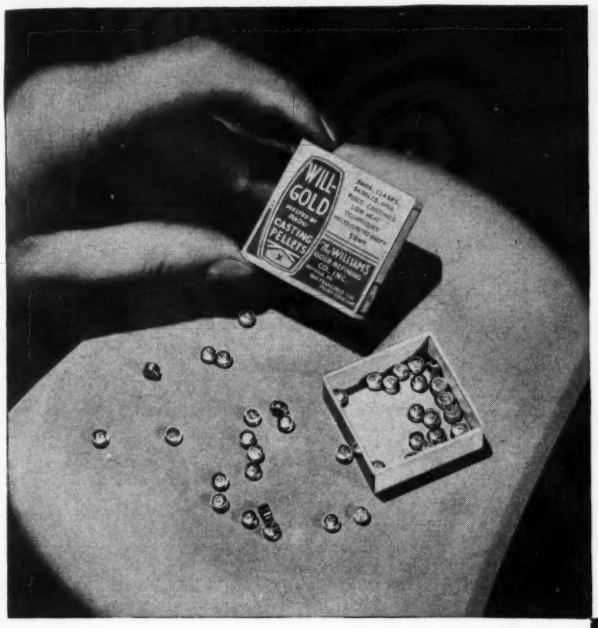

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THE PUBLISHER'S NOTE BOOK

Just as dental literature has advanced so has dental equipment and dental advertising. As you glance through your various dental journals today and see attractive advertisements displaying illustrations of the beautiful, modern dental equipment, compare them with the illustrations below, which were taken from an advertisement in the November issue, Volume 1 of THE DENTAL DIGEST. The pictures are exact reproductions,

in size and quality, and at that time they portrayed the very latest in dental operating chairs.

The advertisement states that the position shown in the lower picture is for Chloroform Narcosis and that this is the only dental chair with which an Elegant Nickel Spittoon is furnished Free.

Tempora mutantur, et nos mutamur in illis.

MERWIN B. MASSOL, *Publisher*

ABOUT OUR CONTRIBUTORS

WILLIAM ABBOTT COLBURN has his D.D.S. from the San Francisco College of Physicians and Surgeons (1910) where he was an instructor for five years. Doctor Colburn is a member of the California State Dental Society and the County Dental Society. He specializes in dental surgery and artificial denture construction at 450 Sutter Street, San Francisco.

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SIDNEY SORRIN, D.D.S., was graduated in 1921 from the New York University College of Dentistry, and his postgraduate work was completed in periodontia and oral diagnosis at Columbia in 1924. The same year he established a periodontia clinic in the New York University College of Dentistry, and since then has continued to organize periodontia clinics in a number of local hospitals. Doctor Sorrin is co-author of the *Practice of Periodontia,* published by The Macmillan Company in 1928, and has contributed numerous articles to dental and medical journals. Doctor Sorrin is a member of the First District Dental Society, A. D. A., American Academy of Periodontology, Allied Dental Council, Harlem Dental Society, Omicron Kappa Upsilon, and Alpha Omega. He is at present assistant professor of periodontia at New York University College of Dentistry, chief of the Periodontia Clinic of the Midtown Hospital and the Sydenham Hospital, periodontist at Montefiore Hospital, instructor of periodontia in postgraduate classes at the Allied Dental Council, and is engaged in the practice of periodontia at 269 West Seventy-Second Street, New York.

NOTICE

An announcement of interest to all subscribers will be found on page 406 of this issue.